7

Removal and Replacement

Introduction

This chapter contains procedures for removing and replacing these cardiograph subassemblies:

- The battery
- The keyboard and the user interface assembly
- The printer drive assembly
- The preview screen assembly (M1700A only)
- The top cover assembly
- The printhead assembly
- The preview logic board (M1700A only)
- The CPU assembly
- The disk drive (M1700A and M1701A only)

Note

As of February 1992, all new PageWriter XL cardiographs are manufactured to a revised mechanical design specification. All units having a serial number prefix of 3208A or later conform to this revised specification.

This chapter contains procedures for all PageWriter XL cardiographs. The particular procedure you will use depends on the serial number prefix of the PageWriter you are servicing. Make sure you use the correct procedure for your particular cardiograph.

Note

The way in which wires and cables are routed and dressed inside the main chassis plays an important part in reducing electromagnetic and radio frequency interference emitted by the cardiograph. When you disassemble any part of the cardiograph, pay special attention to the way cables and wires are routed and dressed. When you reassemble the cardiograph, be sure to route and dress all cables and wires as they were originally.

Tool Requirements

These are the tools you need to remove and replace the cardiograph's subassemblies:

- 7/32-inch nut driver
- Small flat-bladed screwdriver
- T10 and T15 Torx drivers (or Torx driver kit, HP part number 5181-1933)
- Long-nose pliers (recommended, but not necessary)

Note

The directions in this chapter generally assume you are facing the front of the cardiograph as you work. Thus, for example, the "left side of the cardiograph" means "the left side as you face the front of the unit."

The Battery

This section explains how to remove and replace the battery. These procedures apply to all units.

Removing the Battery

To remove the battery:

Caution

To prevent the loss of data (including the configuration and software) stored in system memory, the cardiograph must be connected to AC with the AC switch turned on when the battery is removed.

If you are servicing an M1700A or M1701A PageWriter, store the configured software on disk as described in "Configuration Files" in Chapter 2. If you are servicing an M1702A PageWriter, print a copy of the cardiograph configuration (see Chapter 2). Doing this will help you reconfigure the PageWriter when power is reapplied.

1. Connect the power cord to the cardiograph, then plug the cord into an AC outlet.
2. Turn on the AC switch on the back of the cardiograph and check that the AC indicator on the front panel is lit.
3. Open the battery compartment by loosening the two captive thumbscrews on the back of the cardiograph as shown in Figure 7-1 (the figure shows the M1700A).

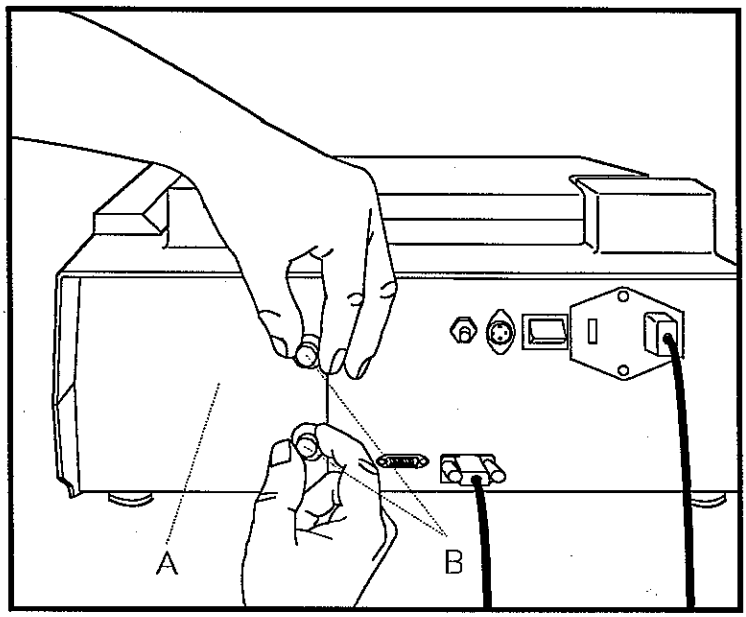

Figure 7-1. Opening the Battery Compartment.

A. Battery door

B. Thumbscrews

Warning **The battery is relatively heavy for its size. Support the battery from underneath as you remove it to prevent it from slipping and possibly causing injury.**

4. Slide the battery and battery holder out of the cardiograph.
5. Separate the battery holder from the battery and set the battery aside for storage or proper disposal.

Warning **Dispose of or recycle depleted batteries according to local regulations. Do not disassemble, puncture, or incinerate the battery assembly.**

Replacing the Battery

To replace the battery:

1. Install the battery in the battery holder. Make sure the tab on the holder fits into the slot on the battery as shown in Figure 7-2.

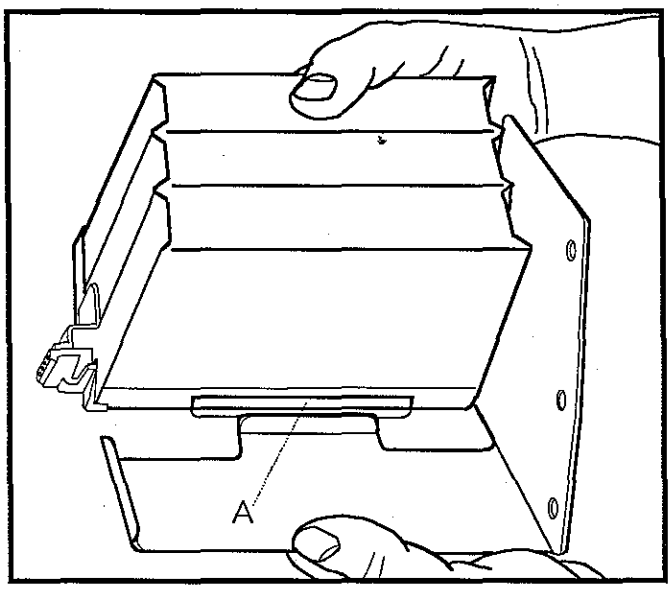

Figure 7-2. Fitting the Battery Holder Tab Into the Battery Slot.

A. Battery slot

2. Gently slide the battery and holder into the battery compartment until completely seated.
3. Finger-tighten the thumbscrews on the battery holder.
4. Press the On-Standby switch to turn the cardiograph **On.**
5. Check that the AC indicator and one or more battery level indicators are lit.

Note

To insure full battery capacity, charge the battery for 24 hours after you install it in the cardiograph. The battery will charge as long as the cardiograph is connected to AC and the AC switch is on.

Note

To verify battery capacity, turn on the unit while the cardiograph is connected to AC power and the AC switch is on. It is important that the cardiograph is connected to AC power when verifying battery capacity.

The Keyboard and the User Interface Assembly

This section explains how to remove and replace the keyboard and the user interface assembly. These procedures apply to all units.

The Keyboard

The keyboard is mounted on the front of the cardiograph in the user interface assembly. To remove the keyboard, carefully insert a flat-bladed screwdriver into the slots and pry as shown in Figure 7-3. To reinstall the keyboard, snap it back in place.

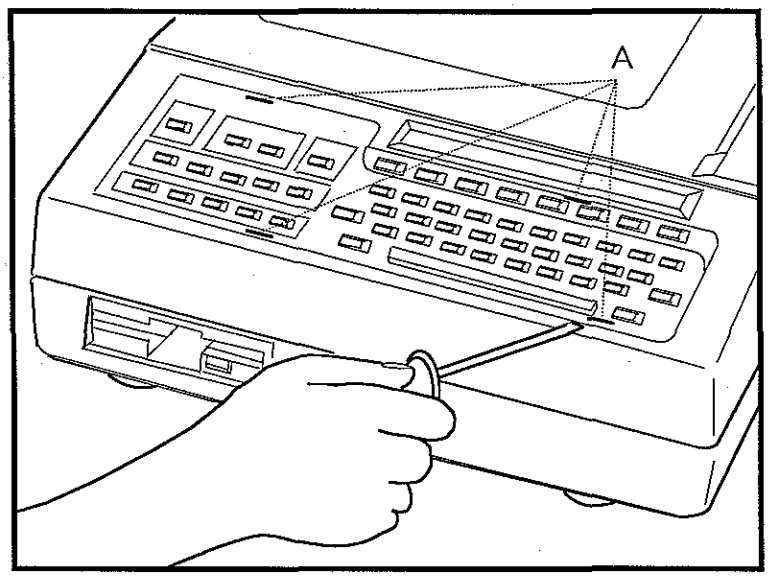

Figure 7-3. Removing the Keyboard.

A. Pry slots

The User Interface Assembly

The user interface assembly consists of the main bezel, the keyboard PCB, and the front panel display.

Removing the User Interface Assembly

Caution

Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when handling the interface assembly.

To remove the user interface assembly:

1. Set the cardiograph to **Standby**.
2. Remove the keyboard.

3. Remove the six screws shown in Figure 7-4.

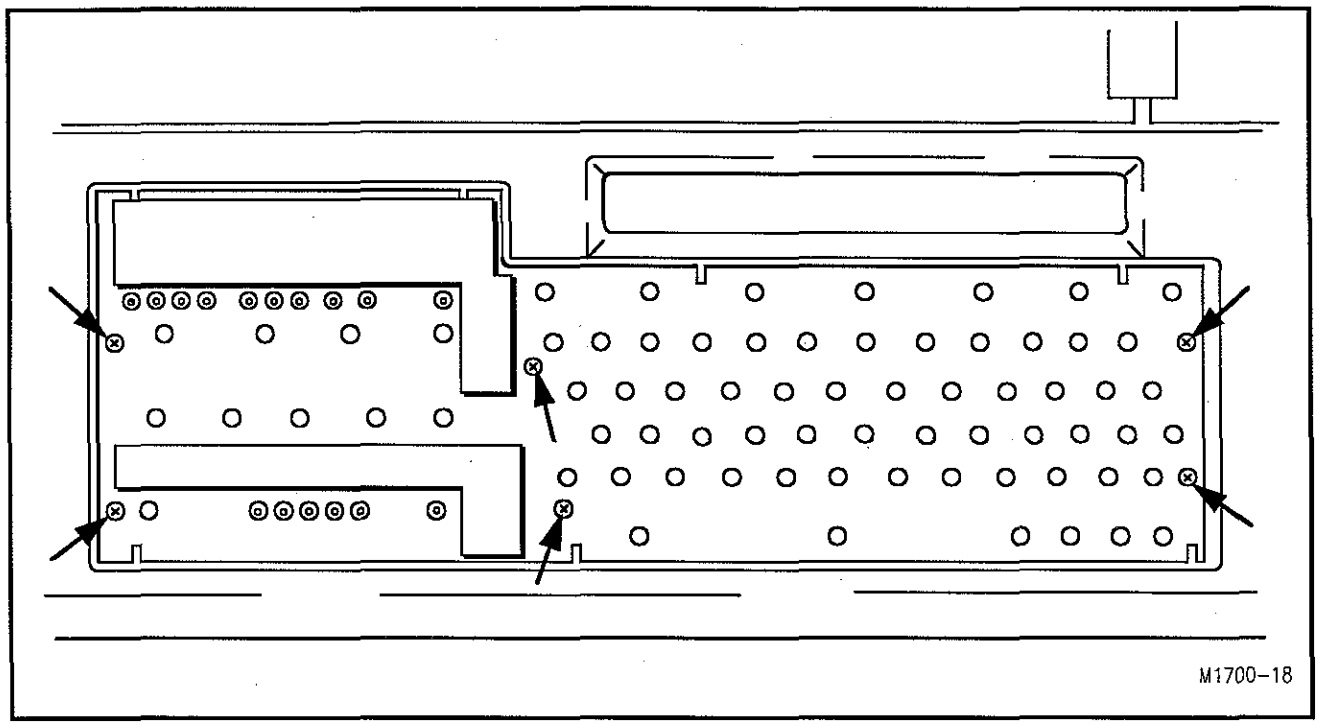

Figure 7-4. User Interface Screw Locations.

4. Carefully lift the assembly and tilt it until the keyboard and LCD circuit boards are accessible.
5. Disconnect the ribbon cables from the circuit boards.

Caution

Do not remove the circuit boards from the user interface assembly. Removing the boards can impair the long-term reliability of the cardiograph.

Replacing the User Interface Assembly

To replace the user interface assembly, reverse the above procedure.

The Printer Drive Assembly

This section describes how to remove and replace the printer drive assembly.

Removing the Printer Drive Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular unit.

PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to remove the printer drive assembly.

To remove the printer drive assembly:

1. Remove the keyboard and the user interface assembly as described previously in this chapter.
2. Remove the printer door:
   a. Release the latch and pull the door out to the first stop.
   b. Compress and remove the plastic retainer clip at the end of the rear plastic rail.
   c. Slide the door out of the rails and set it aside.
3. Lift off the printhead cover as shown in Figure 7-5. As you lift off the cover, note how the tabs on the printhead cover interlock with the other plastic parts of the top cover.

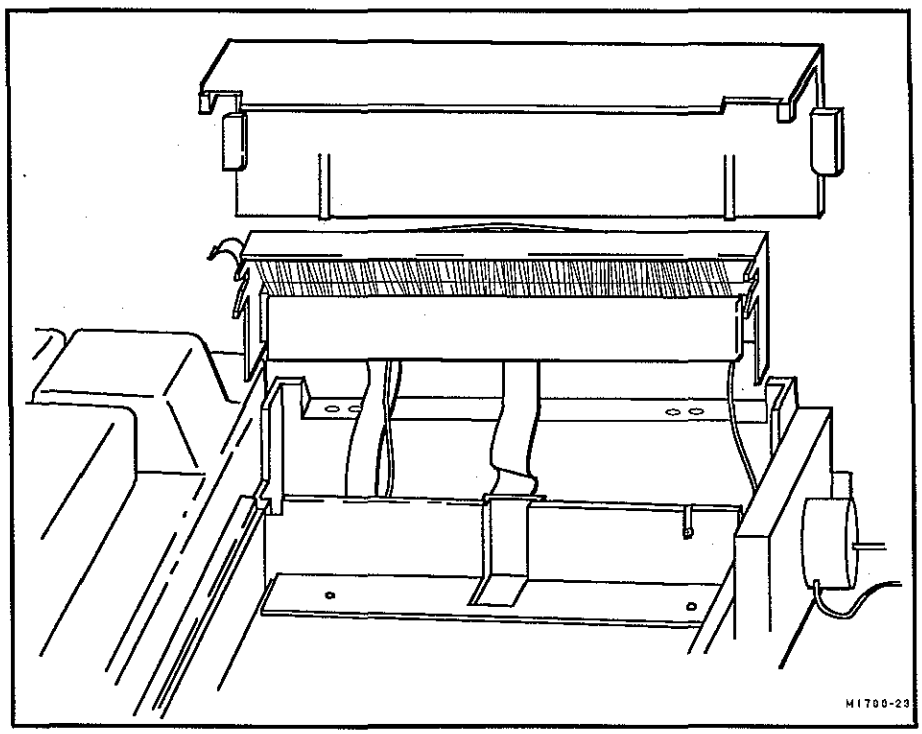

Figure 7-5. Removing the Printhead Cover.

4. Disconnect the motor and sensor connectors.
5. Remove the two screws (see Figure 7-6) that attach the plastic gear housing to the cardiograph.

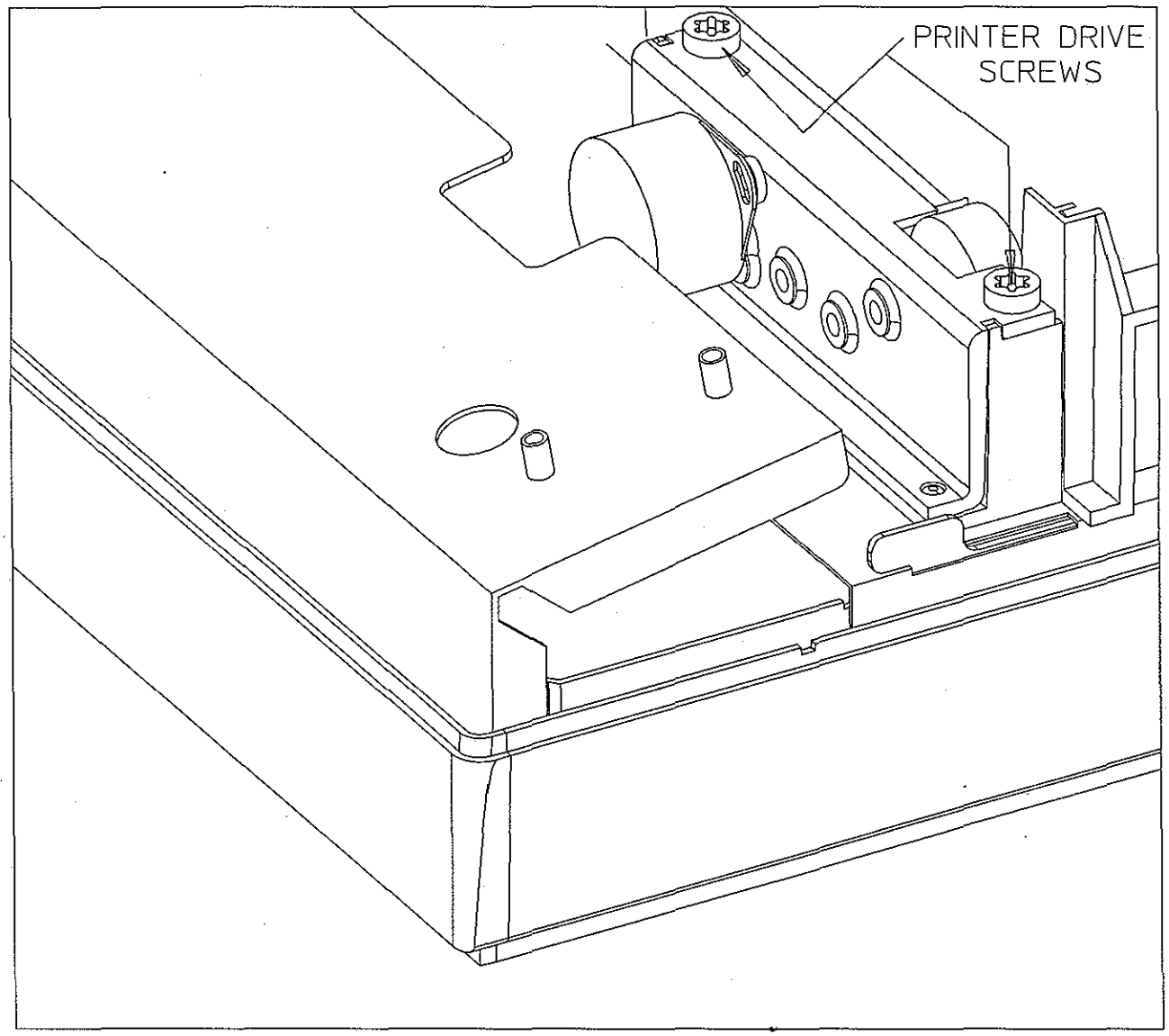

Figure 7-6. Printer Drive and Keyboard Ground Plane Screw Locations.

6. Carefully pry up the plastic gear housing to free it from the alignment pins on the cardiograph. If the gears fall off their shafts, refer to the first step in the printer drive replacement procedure that follows.

PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to remove the printer drive assembly.

To remove the printer drive assembly:

1. Remove the keyboard and the user interface assembly as described previously in this chapter.
2. Remove the printer door:
   a. Release the latch and pull the door out to the first stop.
   b. Compress and remove the plastic retainer clip at the end of the rear aluminum rail.
   c. Slide the door out of the rails and set it aside.
3. Lift off the printhead cover as shown in Figure 7-7. As you lift off the cover, note how the tabs on the printhead cover interlock with the other plastic parts of the top cover.

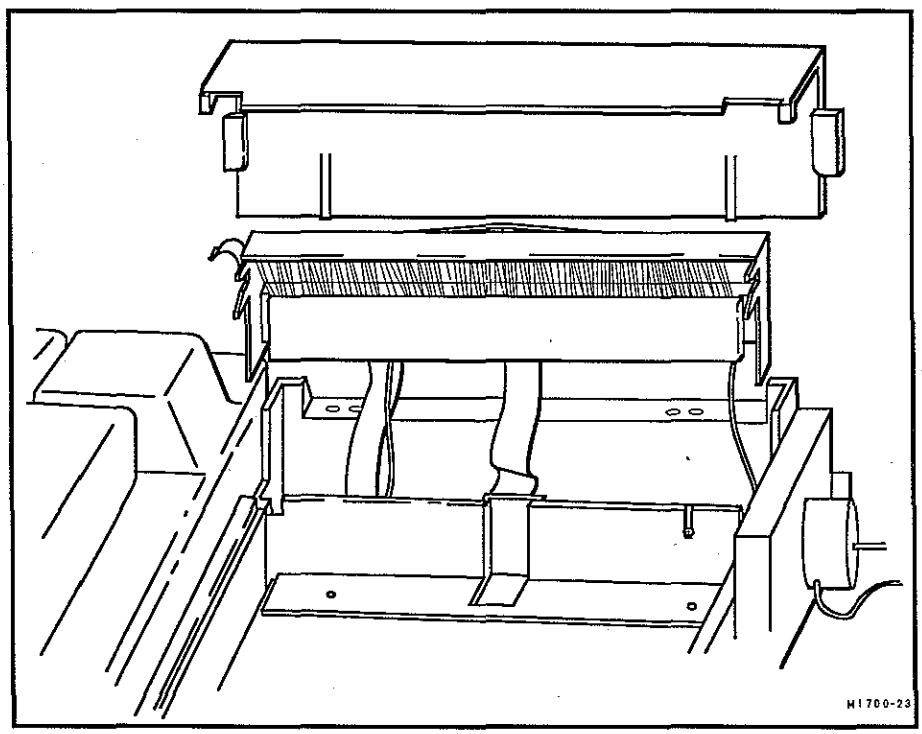

Figure 7-7. Removing the Printhead Cover.

4. Remove the four screws that attach the keyboard ground plane to the upper chassis and set the keyboard ground plane aside. Callout D in Figure 7-8 shows two of the screws.

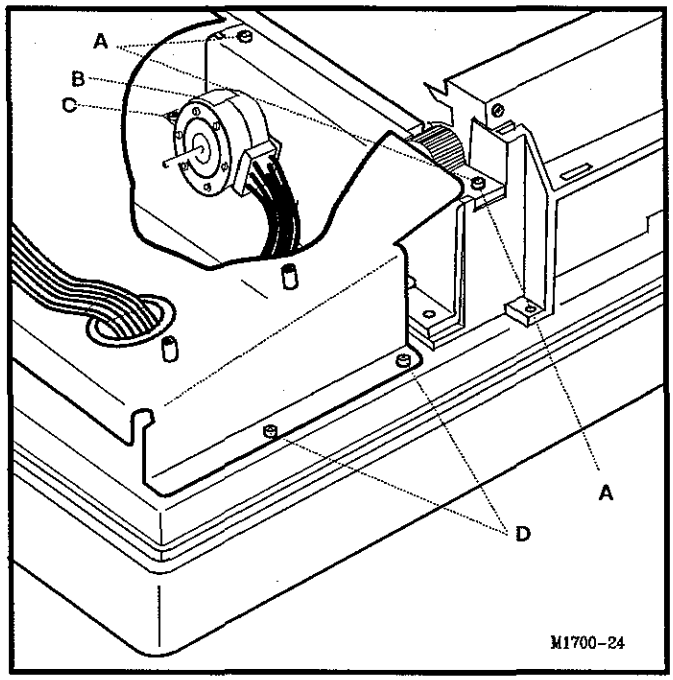

Figure 7-8. Printer Drive and Keyboard Ground Plane Screw Locations.

A. Gear housing screws
B. Motor ground spring
C. Motor ground spring attaching screw
D. Keyboard ground plane screws (two of four)

5. Remove the screw (callout C in Figure 7-8) that attaches the motor ground spring to the upper chassis.
6. Disconnect the motor and sensor connectors.
7. Remove the two screws (callout A in Figure 7-8) that attach the plastic gear housing to the cardiograph.
8. Carefully pry up the plastic gear housing to free it from the alignment pins on the cardiograph. If the gears fall off their shafts, refer to the first step in the printer drive replacement procedure later in this chapter.

Replacing the Printer Drive Assembly

Use this procedure to replace the printer drive assembly. This procedure applies to all units.

To replace the printer drive assembly:

1. If necessary, reinstall the gears. The gears are arranged on the shafts in the gear housing as shown in Figure 7-9. Each gear has a number molded into it. That number corresponds to a number molded into the gear housing next to the appropriate shaft. Insert gears with molded numbers facing up.

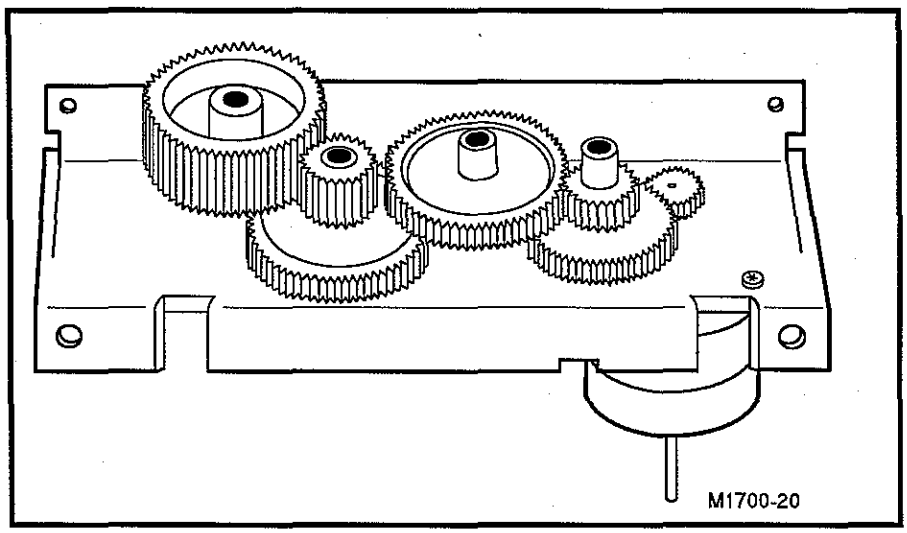

Figure 7-9. The Printer Drive Gears.

2. Press the gear housing onto the alignment pins.
3. Reinstall the two gear housing screws.
4. Reconnect the motor and sensor connectors.

Note

The motor ground spring (callout B in Figure 7-8) and the motor ground spring attaching screw (callout C) were not included on units having a serial number prefix of 3208A, and may be left off.

5. On models having a serial number prefix prior to 3208A, reinstall the motor ground spring and its attaching screw, and reinstall the keyboard ground plane.
6. Reinstall the printhead cover.
7. Reinstall the printer door and the retainer clip.
8. Reinstall the user interface assembly and the keyboard.

The Preview Screen Assembly

This section describes how to remove and replace the preview screen assembly.

Note

PageWriters having a serial number prefix of 3208A or later have a new design that allows easier component-level repair of the preview screen assembly.

Removing the Preview Screen Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

When you remove the preview screen assembly, you can either disassemble it completely, or you can remove the assembly as a single piece that includes the clutches and cables. (The complete replacement preview assembly also includes clutches and cables.) This section includes instructions for removing the preview assembly as a whole and for disassembling it.

PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix 3208A or later, use these procedures to remove or disassemble the preview screen assembly.

Removing the Entire Preview Screen Assembly. Use this procedure to remove the preview screen assembly as a single unit.

Warning

Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the left and right clutch covers:
   a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the cover and gently pry up till the catch releases.
   b. Tilt the cover forward slightly to disengage the tabs at the front, then lift the cover away. (This is easier if the screen assembly lays flat on the PageWriter.)
6. Remove the mounting screws and washers from the left and right clutches.
7. Lift the preview screen assembly off of the cardiograph.
8. Remove the user interface as described earlier in this chapter.

9. Remove the three screws from the rear panel as shown in Figure 7-10.

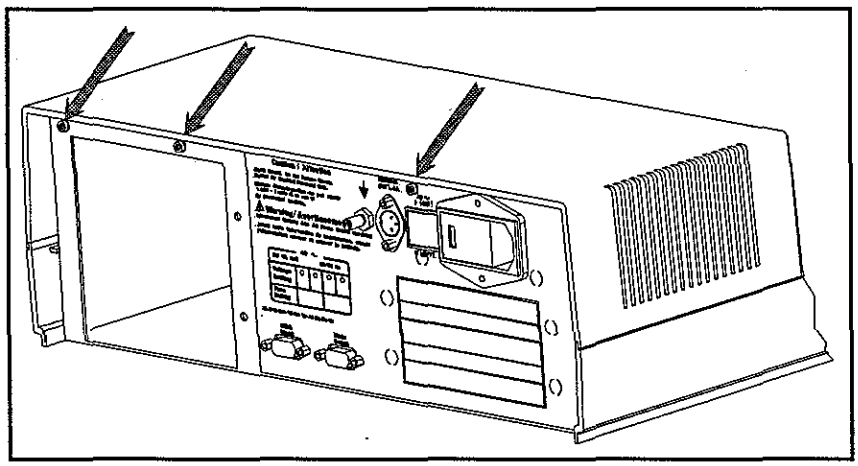

Figure 7-10. Opening and Removing the Top Cover Assembly.

10. Open the top cover and disconnect the preview cable from the preview logic board (see "Opening and Removing the Top Cover Assembly" later in this chapter).

Disassembling the Preview Screen Assembly. Use this procedure to disassemble the preview screen assembly.

Warning **Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.**

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the two knobs from the front of the display.
6. Remove the left and right clutch covers:
   a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the cover and gently pry up till the catch releases.
   b. Tilt the cover forward slightly to disengage the tabs at the front, then lift the cover away. (This is easier if the screen assembly lays flat on the PageWriter.)
7. Remove the right clutch:
   a. Remove the mounting screws and washers.
   b. Slide the clutch off of the screen housing's right pivot arm. The clutch fits tightly on the pivot arm and requires effort to remove it.

8. Pull the screen housing's left pivot arm out of the left clutch and lay the screen face down on top of the cardiograph.
9. Pry off the back cover of the screen housing:
   a. Use a small flat-bladed screwdriver to disengage the three catches on the bottom of the screen housing shown in Figure 7-11.

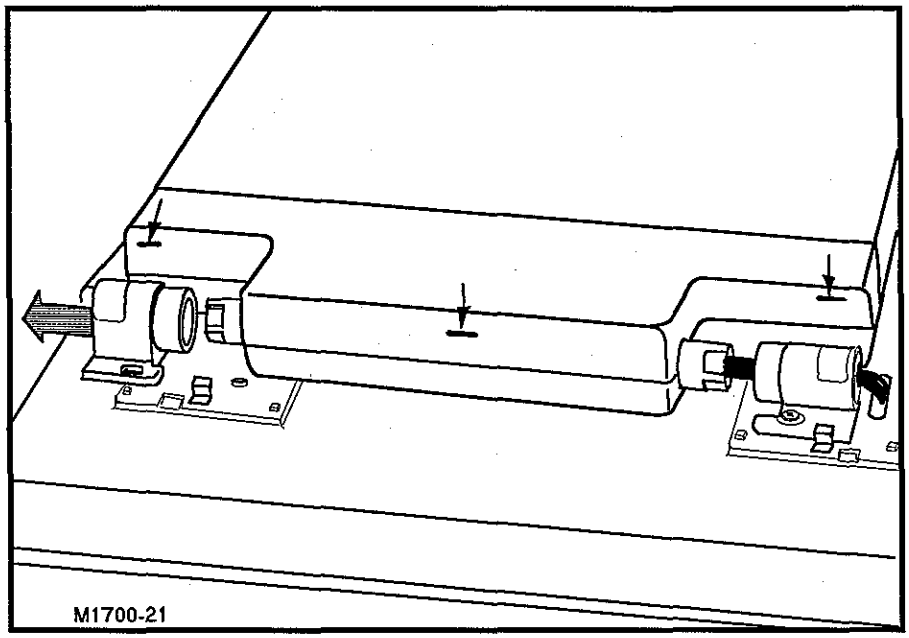

Figure 7-11. Removing the Preview Screen Assembly.

   b. Pivot the cover up until the catches on the top of the screen housing release.
10. Use the T10 Torx driver to remove the screw that connects the green and yellow ground wire from the display cable to the metal display frame.
11. Lift the power supply board out of the screen assembly, and disconnect the ribbon cable from the power supply board.
12. Remove the flat ribbon cable to the LCD, and set the power supply aside.
13. To remove the display screen from the assembly, remove the remaining four screws that attach the screen to its case, and lift the screen out.

PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use these procedures to remove or disassemble the preview screen assembly.

Removing the Entire Preview Screen Assembly. Use this procedure to remove the preview screen assembly as a single unit.

Warning

Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the left and right clutch covers:
   a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the clutch cover and gently pry up till the catch releases.
   b. Tilt the clutch cover forward slightly to disengage the tabs at the front, then lift it away. (This is easier if the display lays flat on the PageWriter.)
6. Remove the screws holding the ground straps on both sides.
7. Remove the mounting screws and washers from the right and left clutches.
8. Open the top cover and disconnect the preview cable from the preview logic board (see "Opening and Removing the Top Cover Assembly" later in this chapter).

Disassembling the Preview Screen Assembly. Use this procedure to disassemble the preview screen assembly.

Warning

Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the left and right clutch covers:
   a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the clutch cover and gently pry up till the catch releases.

b. Tilt the clutch cover forward slightly to disengage the tabs at the front, then lift it away. (This is easier if the display lays flat on the PageWriter.)

6. Remove the screws holding the ground straps on both sides.
7. Remove the right clutch:
   a. Remove the mounting screws and washers.
   b. Slide the clutch off of the screen housing's right pivot arm. The clutch fits tightly on the pivot arm and requires effort to remove it.
8. Pull the screen housing's left pivot arm out of the left clutch and lay the screen face down on top of the cardiograph.
9. Pry off the back cover of the screen housing:
   a. Use a small flat-bladed screwdriver to disengage the three catches on the bottom of the screen housing, as shown in Figure 7-12.

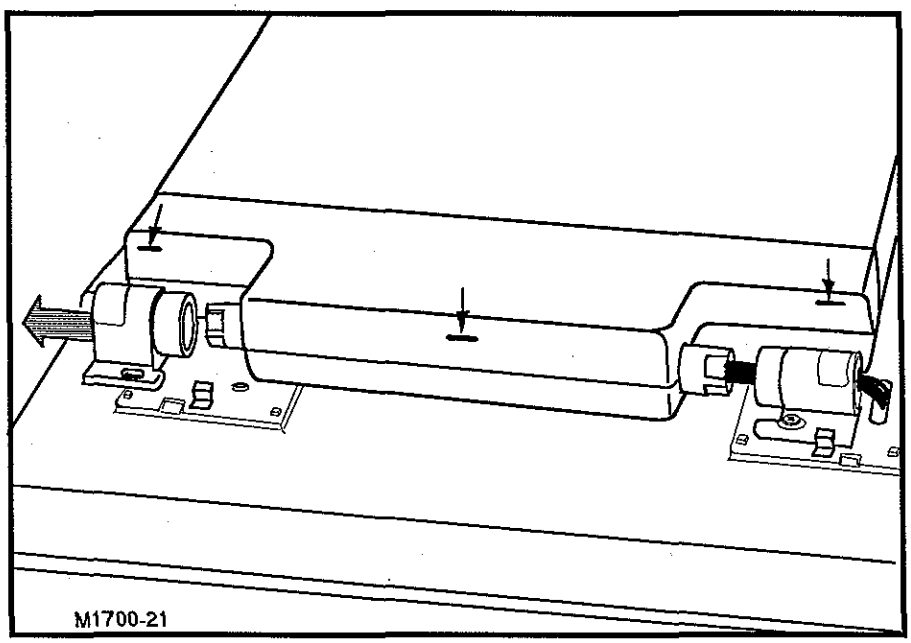

Figure 7-12. Removing the Preview Screen Assembly.

   b. Pivot the cover up until the catches on the top of the screen housing release.
10. Disconnect the ribbon cable from the power supply board. The screen assembly is now free from the cardiograph.

Replacing the Preview Screen Assembly

To replace the preview screen assembly, reverse the appropriate removal procedure.

Note

When reinstalling the ribbon cable from the display to the power supply board, be sure not to twist the cable or the display may not operate.

The Top Cover Assembly

This section describes how to remove and replace the top cover assembly. The top cover assembly includes the upper chassis and attached covers, the printer assembly, and, on the M1700A, the preview screen assembly.

To ensure your safety and prevent damage to the cardiograph, these procedures instruct you to remove the battery *and* disconnect the AC power, which means that the contents of system memory will be lost, including the configuration and software. When you reapply power to the M1700A or M1701A cardiograph, you must install the software using either the System disk supplied with the cardiograph or a custom configuration disk. Before removing the M1702A battery, print a copy of the cardiograph configuration to facilitate restoring the configuration when power is reapplied. See "Installing Software" in Chapter 2.

Opening and Removing the Top Cover Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to open and remove the top cover assembly.

Note

You can service any PageWriter with a serial number prefix of 3208A or later without removing it from the cart.

To open the top cover assembly:

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.

Warning

When the cardiograph is connected to AC power, there are dangerous voltages on the line module terminals, even when the AC switch is off. When the AC switch is on, there are also dangerous voltages on the terminals of the mains transformer. If you must have the AC power connected while the cardiograph is open, do not touch any of the exposed connectors.

The rectifier assembly capacitors store hazardous amounts of energy during AC and battery operation. Be careful not to touch any of the exposed capacitor connections.

5. Remove the user interface assembly as described earlier in this chapter.
6. Remove the three screws from the rear panel as shown in Figure 7-13.

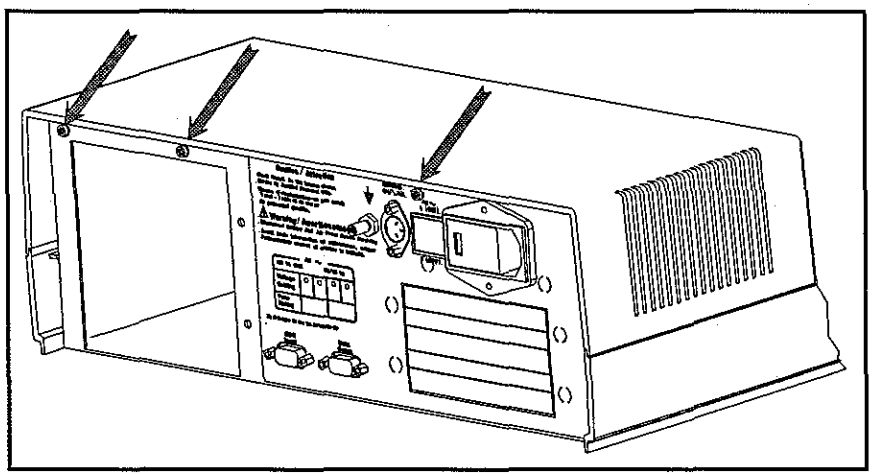

Figure 7-13. Opening and Removing the Top Cover Assembly.

7. Slide the top cover forward about 1 inch, then carefully lift it straight up until there is enough clearance to tilt the left side up.

To remove the top cover assembly, continue as follows:

8. If the cardiograph is equipped with a preview display, disconnect the cable that connects the preview screen to the preview logic board and a ground wire. Disconnect the four cables and the ground wire that connect the top cover assembly to the CPU assembly.
9. Lift the top cover assembly out of the way and set it aside.

PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to open and remove the top cover assembly.

To open the top cover assembly:

1. Disconnect the AC cord.
2. Turn on the cardiograph and remove the battery while the cardiograph is on. (This discharges the rectifier assembly in approximately 20 seconds.)
3. Remove the PageWriter from the cart and place it on a suitable work surface.

Warning

When the cardiograph is connected to AC power, there are dangerous voltages on the line module terminals, even when the AC switch is off. When the AC switch is on, there are also dangerous voltages on the terminals of the mains transformer. If you must have the AC power connected while the cardiograph is open, do not touch any of the exposed connectors.

The rectifier assembly capacitors store hazardous amounts of energy during AC and battery operation. Be careful not to touch any of the exposed capacitor connections.

4. Remove the seven screws from the rear panel as shown in Figure 7-14.

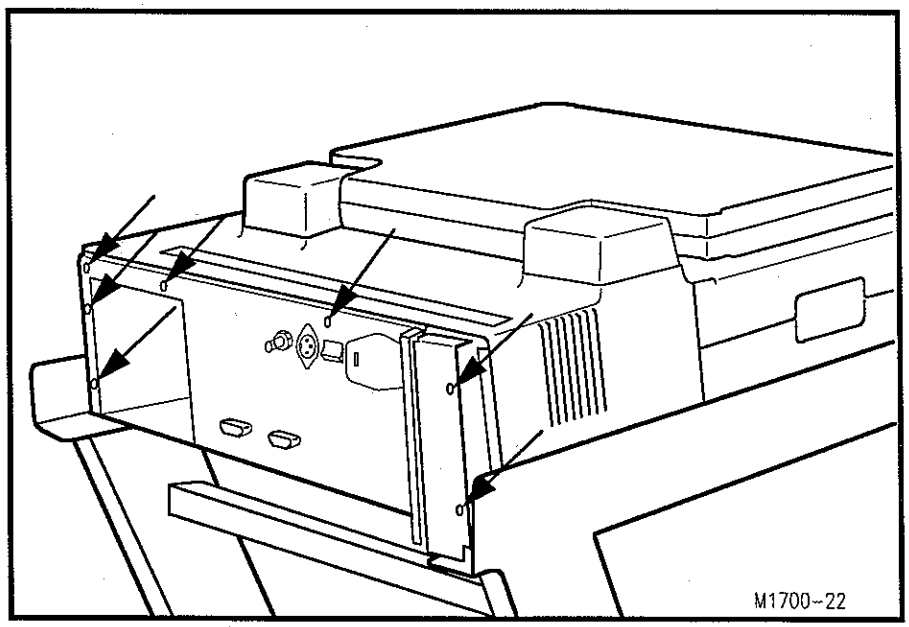

Figure 7-14. Opening and Removing the Top Cover Assembly.

5. Slide the top cover forward about 1 inch, then carefully lift it straight up until there is enough clearance to tilt the left side up.

To remove the top cover assembly, continue as follows:

6. If the cardiograph is equipped with a preview display, remove the screw that secures the cable shield wire to the preview logic RFI shield. Disconnect the cable that connects the preview screen to the preview logic board.
7. Disconnect the four cables that connect the top cover assembly to the CPU assembly.
8. Lift the top cover assembly free of the lower chassis and set it aside.

Reinstalling the Top Cover Assembly

To reinstall the top cover assembly, reverse the appropriate removal procedure.

The Printhead Assembly

This section describes how to remove and replace the printhead assembly.

Removing the Printhead Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to remove the printhead assembly.

Caution

Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the printhead assembly.

To remove the printhead:

1. Remove the printer door:
   a. Release the latch and pull the door out to the first stop.
   b. Compress and remove the plastic retainer clip at the end of the rear plastic rail.
   c. Slide the door out of the rails and set it aside.
2. Remove the user interface assembly as described previously in this chapter.
3. Open the top cover as described previously in this chapter.
4. Remove the printhead cover as shown in Figure 7-15.

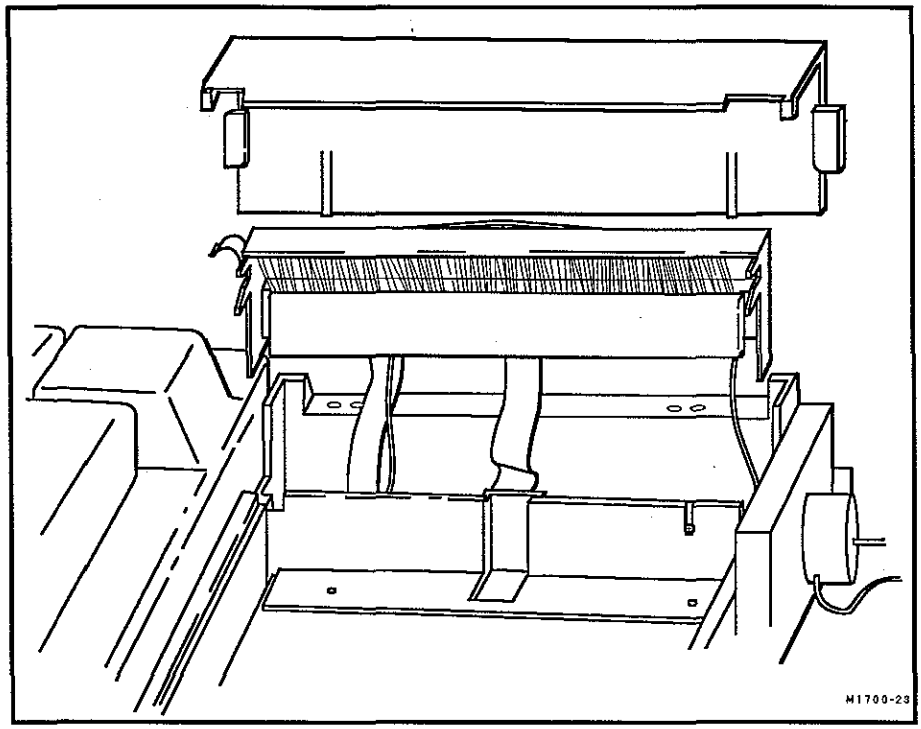

Figure 7-15. Removing the Printhead Cover and Printhead.

5. Disconnect the two printer cables at J2 and J5 (see Figure 7-20 for the connector locations), and remove the ground wire.
6. Close the top cover, but do not reinstall the screws. (You need to open the cover again when you install the new printhead.)
7. Pull the leaf spring up and out of its slots in the well.
8. Carefully slide the printhead assembly up and out of the printer well. Pull the two ribbon cables and the ground wire from the slots in the top cover.

PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to remove the printhead assembly.

Caution

Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the printhead assembly.

To remove the printhead:

1. Remove the printer door:
   a. Release the latch and pull the door out to the first stop.
   b. Compress and remove the plastic retainer clip at the end of the rear aluminum rail.

c. Slide the door out of the rails and set it aside.

2. Remove the user interface assembly as described previously in this chapter.
3. Open the top cover as described previously in this chapter.
4. Remove the right side plastic cover.
5. Disconnect the two printer cables at J2 and J5 (see Figure 7-20 for the connector locations).
6. Close the top cover but do not reinstall the screws. (You need to open the cover again when you install the new printhead.)
7. Remove the printhead cover as shown in Figure 7-16.

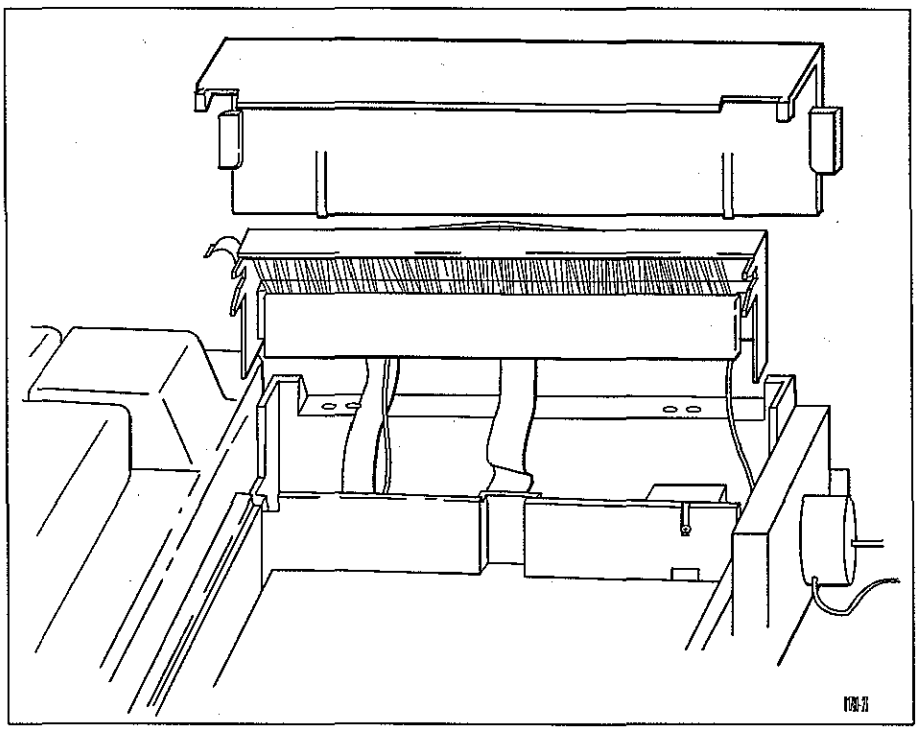

Figure 7-16. Removing the Printhead Cover and Printhead.

8. Remove the screws that attach the motor ground spring and printhead ground braids to the upper chassis.
9. Pull the leaf spring up and out of its slots in the well.
10. Remove the two screws holding the ground straps to the upper chassis.
11. Carefully slide the printhead assembly up and out of the printer well. Pull the two ribbon cables from the slots in the top cover.

Removing the Optical Paper Sensor. Remove the optical paper sensor as follows:

1. From the inside of the empty paper compartment, insert a small, flat-bladed screwdriver into the square hole (see Figure 7-16) on the surface of the plastic printhead housing.
2. Apply pressure, using the screwdriver to compress the clip that holds the lens in place, and lift the lens out.

Note

To remove the sensor on some units with a serial number perfix of 3023A, remove the printer from the top cover to gain access to the sensor.

Replacing the Printhead Assembly

Use this procedure to replace the printhead assembly. This procedure applies to all units.

To replace the printhead:

1. Unpack the new printhead. Locate the manufacturer's label behind the ESD brush fibers. Note the resistance code printed in the upper-left quadrant of the manufacturer's label. You need this code later in this procedure when you set the printhead resistance selector on the CPU assembly. The code is a number that corresponds to a range of printhead resistance, as listed in the following table.

Table 7-1. Printhead Resistance Codes

Code	Resistance	Code	Resistance
00	535–550 Ω	08	631–640 Ω
01	551–565	09	641–650
02	566–580	A	651–660
03	581–590	B	661–670
04	591–600	C	671–680
05	601–610	D	681–695
06	611–620	E	696–710
07	621–630	FF	711–725

2. Feed the power and data cables (and the ground wire on newer units) into the cardiograph assembly as you lower the printhead into position. Slide the printhead down into the printer well.
3. On PageWriters having a serial number prefix prior to 3208A, feed the ground braids to the top chassis and fasten.
4. Push the leaf spring into its slots in the well.
5. Open the top cover assembly.
6. Connect the power and data cables and the ground wire to the appropriate connectors on the CPU assembly.

7. Set selector S1 (refer to Figure 7-17) to the number or letter that corresponds to the resistance code on the printhead label. 00 corresponds to position 0, 09 corresponds to position 9, FF corresponds to position F, etc.

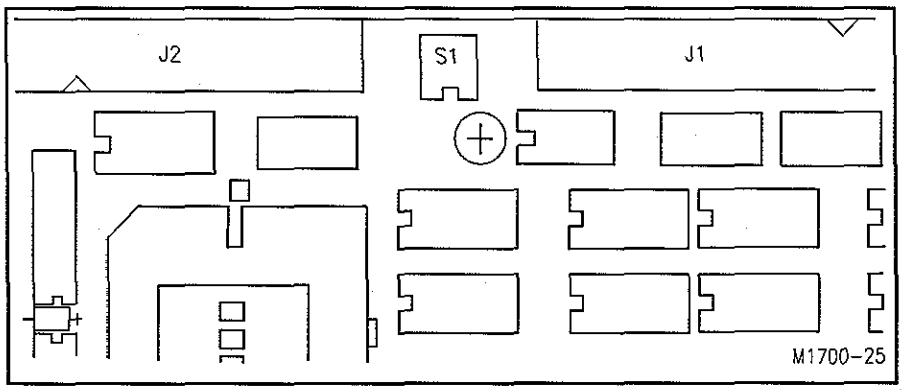

Figure 7-17. Printhead Resistance Selector.

8. Close the top cover assembly.
9. Replace the printhead cover.
10. Install the user interface assembly and the keyboard.
11. Run the Extended Self-test printer test described in Chapter 4.

The Preview Logic Board

This section describes how to remove and replace the preview logic board. These procedures apply only to models equipped with the preview display option.

Removing the Preview Logic Board

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to remove the preview logic board.

Caution

Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the preview logic board.

To remove the preview logic board:

Warning

Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the top cover assembly as described previously in this chapter.

6. Remove the four screws that hold the preview logic board and shield to the chassis (see Figure 7-18).
7. Disconnect the preview logic board assembly from the system expansion connector on the CPU board assembly, and slide the logic board out.

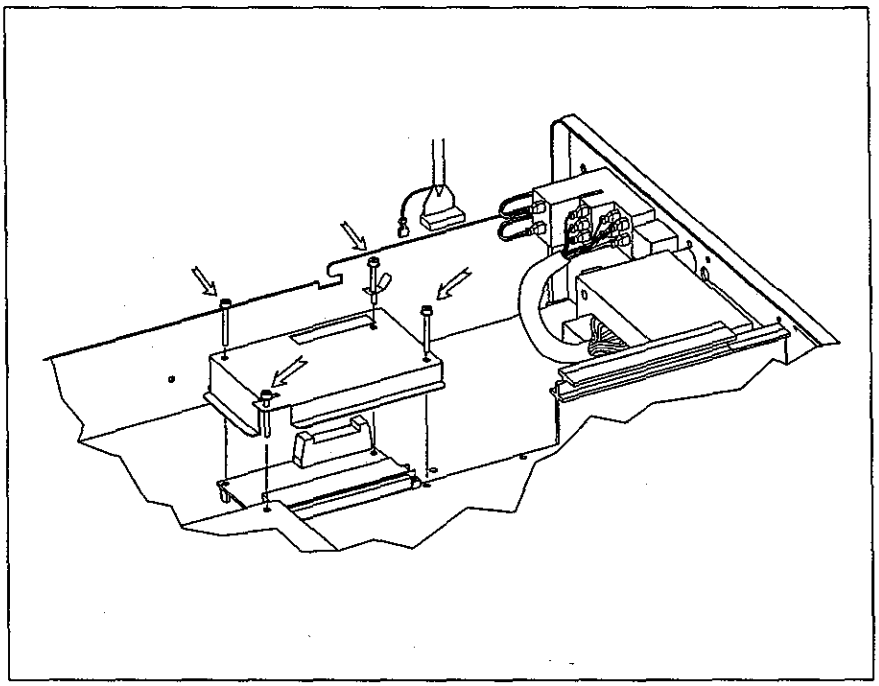

Figure 7-18.
Preview Logic Board Removal (Serial Number Prefix 3208A or Later).

PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to remove the preview logic board.

Caution

Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the preview logic board.

To remove the preview logic board:

Warning

Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages and to avoid damage to the preview display.

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the top cover assembly as described previously in this chapter.
6. Remove the screws that hold the preview logic board and shield assembly to the chassis bottom and rear (see Figure 7-19).

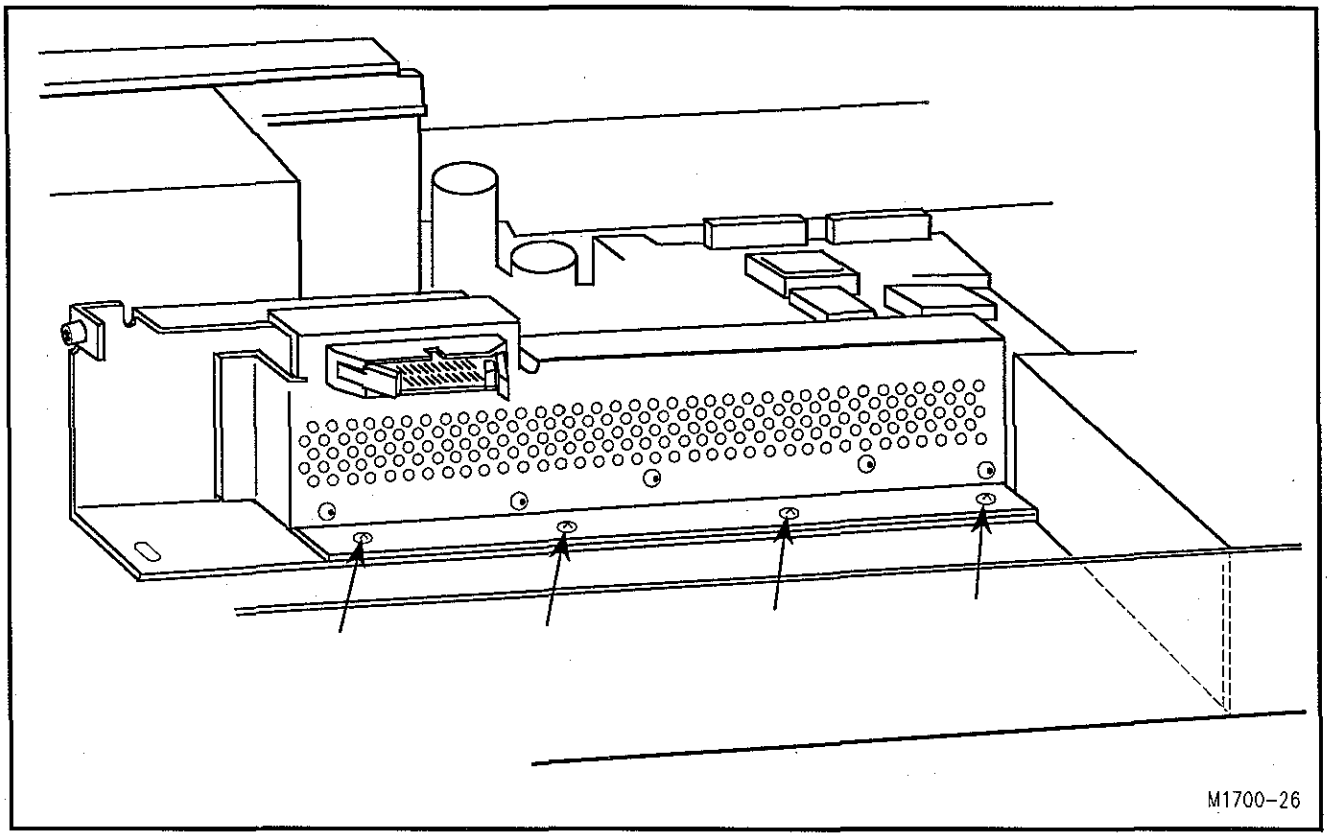

Figure 7-19. Preview Logic Board Assembly Screw Locations.

7. Disconnect the preview logic board assembly from the system expansion connector on the CPU board assembly, and slide the entire assembly out.
8. Remove the screws that hold the RFI shield and board to the frame. The shield and board can then be lifted off the frame.

Replacing the Preview Logic Board

To replace the logic board, reverse the appropriate removal procedure, or refer to the installation instructions included with the replacement part.

The CPU Assembly

This section describes how to remove and replace the CPU assembly. This procedure applies to all units.

Removing the CPU Assembly

To remove the CPU assembly:

Caution

Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting cables from and handling the CPU assembly.

Warning

Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the top cover assembly as described previously in this chapter.
6. Disconnect the two rectifier cable spade lugs (J6 and J7) and the two disk drive cables (J14 and J15). (See Figure 7-20 for jumper locations.)
7. If the unit has a preview assembly, remove the preview logic board assembly as described previously in this chapter.
8. Remove the board mounting screws (shown in Figure 7-20). Also remove the jackposts that hold the serial and patient module connectors to the rear panel.
9. Lift off the RFI shield, then slide the board toward the front of the cardiograph and disconnect the spade lug at J8.
10. Lift the board out of the lower chassis.

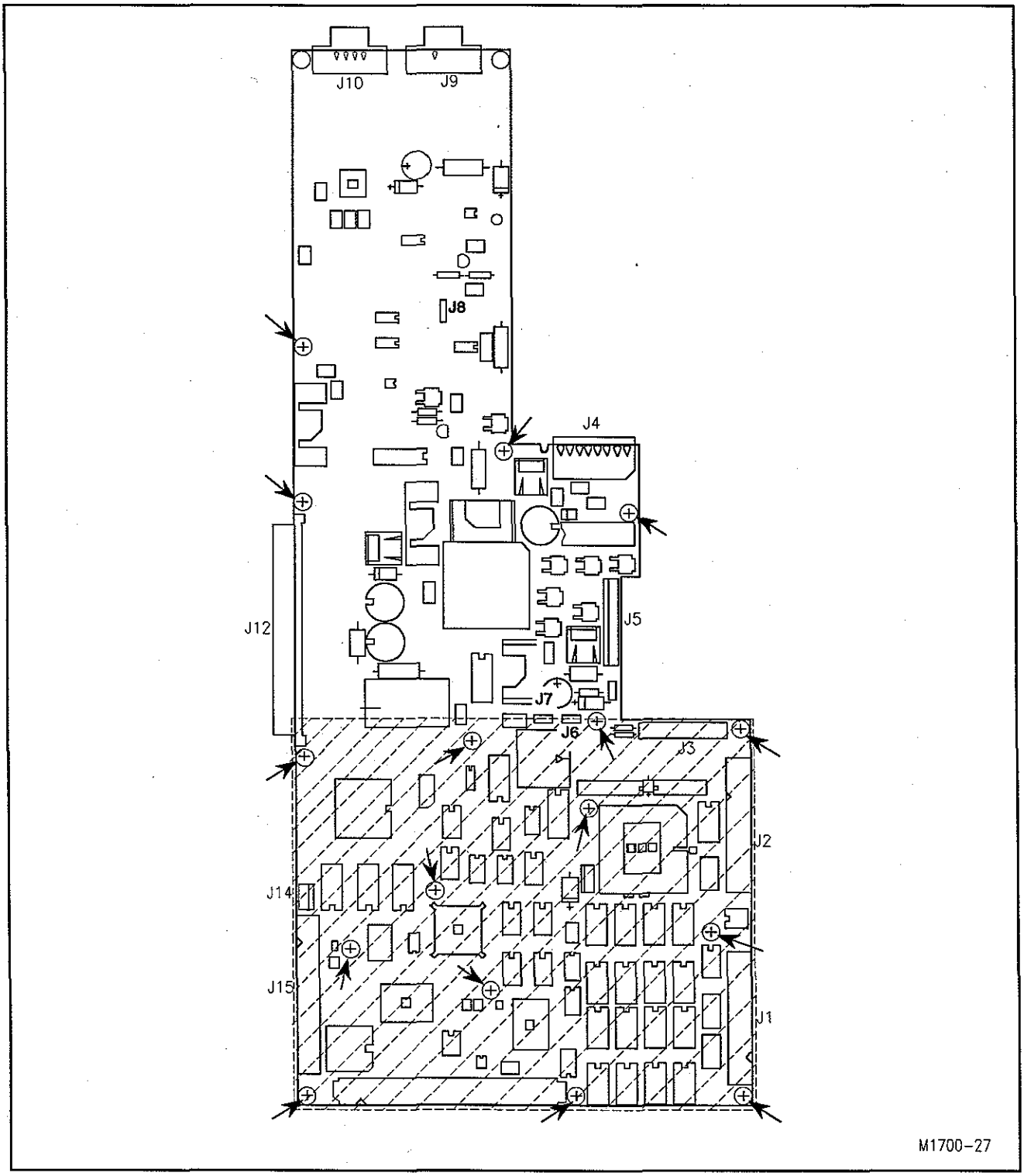

Figure 7-20. Screw and Connector Locations on the CPU Assembly.

Replacing the CPU Assembly

To replace the CPU assembly, reverse the removal procedure.

The Disk Drive (M1700A and M1701A only)

This section describes how to remove and replace the disk drive.

To remove the disk drive:

Caution

Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting cables from and handling the disk drive.

1. Remove the top cover assembly as described previously in this chapter.
2. Remove the two screws that attach the plastic vibration mounts to the chassis.
3. On units having a serial number prefix prior to 3208A, remove the 7/32-inch nut that attaches the ground strap to the chassis (see Figure 7-21).

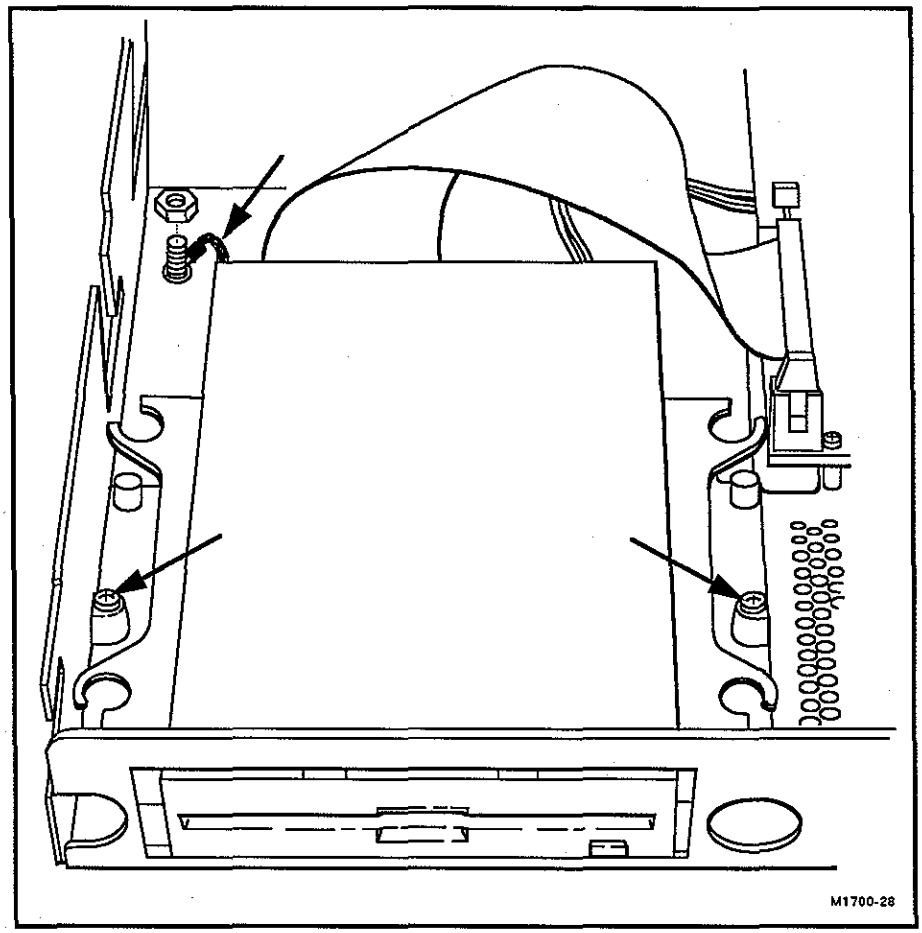

Figure 7-21. Disk Drive Mounting Screws.

4. Lift the disk drive enough to disconnect the data cable and power cable.
5. Remove the disk drive from the chassis.
6. Remove the screws that attach the vibration mounts to the disk drive and set the mounts aside for reuse.
7. Remove the screw that attaches the ground strap to the bottom of the disk drive; set the ground strap and screw aside for reuse.

Replacing the Disk Drive

To replace the disk drive, reverse the removal procedure.

8

Parts Lists

Introduction

This chapter contains the parts lists for the cardiograph, printer, preview display, cart, and data communications package. The numbers on each figure or exploded view refer to the parts list on the facing page.

Ordering Information

You can order any of the parts listed through your local Hewlett-Packard Sales/Service Office (listed at the back of this manual). In the United States and Canada you can call the Direct Customer Order Center toll-free at 1-800-227-8164.

In the United States, you can order medical supplies for the cardiograph by calling toll-free 1-800-225-0230.

Calling for Assistance

Here are the numbers you can use to call Hewlett-Packard Service for technical assistance.

United States of America	**Eastern Region**	Tel: 1-800-245-4406
	Western Region	Tel: 1-800-428-0949
	Southern Region	Tel: 1-800-845-8374
	Midwestern Region	Tel: 1-800-323-2280
Canada	**Eastern Region**	Tel: 1-800-361-9790
	Central and Western Region	Tel: 1-800-268-1221

Refer any questions or comments regarding these instruments to the nearest HP Sales/Service Office, or to one of Hewlett-Packard's Service Dispatch Centers. Always identify the instrument by model number and serial number in all correspondence. Hewlett-Packard sales and service offices are listed at the end of this manual.

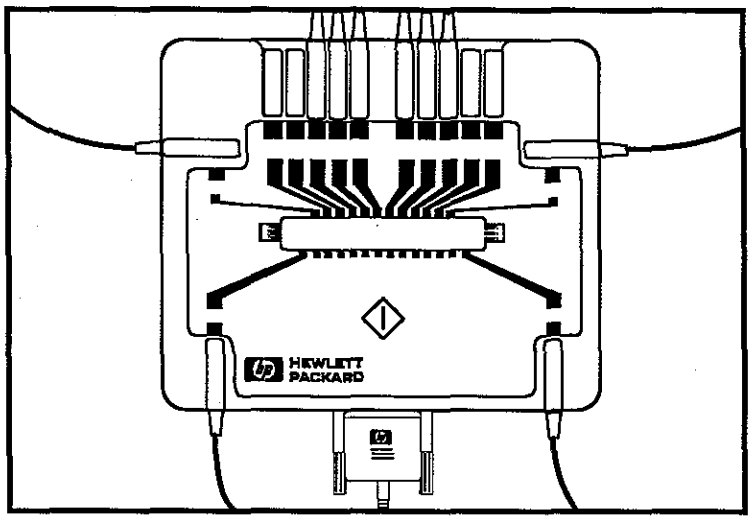

Figure 8-1. Patient Module Diagram.

Note The M1702A patient module does not have a display or a start button.

Note All references to AHA mean that the color code conforms to recommendations of the American Heart Association.

All references to IEC mean that the color code conforms to International Electrotechnical Commission Standards. Refer to Table 1-8 for your geographical location.

Table 8-1. Patient Module Parts List

Description	Part No.
Patient module, AHA (M1700A & M1701A)	M1700-69501
Patient module, IEC (M1700A & M1701A)	M1700-69502
Patient module, AHA (M1702A)	M1702-69501
Patient module, IEC (M1702A)	M1702-69502
SAECG patient module, AHA (M1700A)	M1700-69511
SAECG patient module, IEC (M1700A)	M1700-69512
Patient data cable, 2.5 M	M1719A
Patient data cable, 9.0 M	M1720A
Jack nuts (data cable inserts)	M1700-27903
Limb leadwire replacement kit, AHA	M1711A
Limb leadwire replacement kit, IEC	M1714A
Chest leadwire replacement kit (24 in/60 cm), AHA	M1712B
Chest leadwire replacement kit (24 in/60 cm), IEC	M1715B
Chest leadwire replacement kit (15 in/38 cm), AHA	M1712C
Chest leadwire replacement kit (15 in/38 cm), IEC	M1715C
Leadwire set, AHA, complete	M1713B
Leadwire set, IEC, complete	M1716B
Leadwire set, Peds/Frank (includes 2 Frank leads labels)	M1717B
Frank leads label	M1700-84513
Shorting plug	M1700-47602
Leadwire support kit	M1718A
Label for patient module, AHA (M1700A and M1701A)	M1700-84509
Label for patient module, IEC (M1700A and M1701A)	M1700-84592
Label for patient module, AHA (M1702A)	M1702-84509
Label for patient module, IEC (M1702A)	M1702-84510
Label for SAECG patient module, AHA (M1700A)	M1700-84589
Label for SAECG patient module, IEC (M1700A)	M1700-84590
Module end label	M1700-84521

Note

- Each limb leadwire replacement kit contains two leadwires and ID rings for all limb leads.
- Each chest leadwire replacement kit contains three leadwires and ID rings for all chest leads.
- The leadwire support kit contains shorting plugs, lead spreaders, and post adapters.
- Use part number M1717B for VCG replacement leadwires.
- The C version chest leadwire kits are the same length as the original A version kits.
- The SAECG patient modules function identically to the standard modules when the cardiograph is not in SAECG mode.

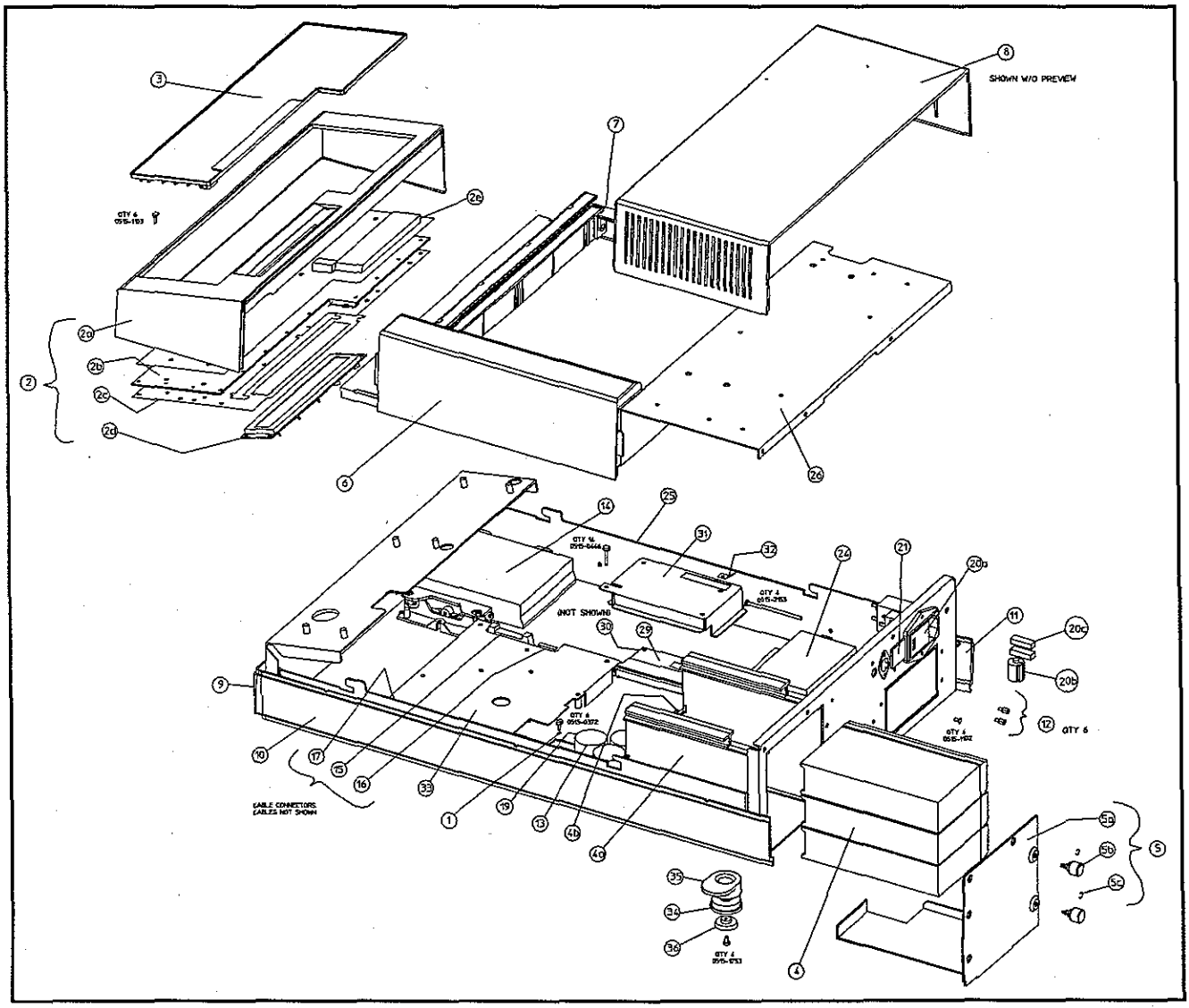

Figure 8-2. Main Assembly Exploded Diagram (Serial Number Prefix 3208A or Later).

Note

The battery door assembly does not include the door label. To get the label, order the label set for the language needed.

Table 8-2.
Main Assembly Parts List (Serial Number Prefix 3208A or Later)

Ref. No.	Description	Part No.
1	CPU assembly, M1700A	M1700-60100
	Refurbished CPU assembly, M1700A	M1700-68100
	CPU assembly, M1701A	M1700-60104
	Refurbished CPU assembly, M1701A	M1700-68104
	CPU assembly, M1702A	M1700-60106
	Refurbished CPU assembly, M1702A	M1700-68106
2	User interface assembly	M1700-67120
2a	Main bezel assembly	M1700-67202
2b	Key PCB assembly (includes gasket)	M1700-47201
2c	Keyboard shield	M1700-84602
2d	LCD	M1700-67204
2e	Keyboard rubber gasket	M1700-47310
3	Key assembly, Dutch	M1700-64738
	Key assembly, English	M1700-64708
	Key assembly, French	M1700-64718
	Key assembly, German	M1700-64728
	Key assembly, Italian	M1700-64758
	Key assembly, Spanish	M1700-64748
	Key assembly, Swedish	M1700-64768
4	Battery assembly, lead-acid	M1721A
4a	Battery guide (left or right side)	M1700-47309
4b	Battery shield	M1700-47308
5	Battery door assembly	M1700-67108
6	Cover, right side (printhead)	M1700-47204
7	Left side (not shown)	M1700-47205
8	Cover, top rear (M1700A w/o preview, M1701A, M1702A)	M1700-47206
	Cover, top rear (M1700A w/ preview)	M1700-47225
9	Cover, front (M1700A and M1701A)	M1700-47207
	Cover, front (M1702A)	M1702-47207
10	Side, right lower	M1700-47217
11	Side, left lower	M1700-47229

Table 8-2.
Main Assembly Parts List (Serial Number Prefix 3208A or Later) (continued)

Ref. No.	Description	Part No.
12	Jack nut	0380-2087
13	Diode array cable assembly	M1700-61608
14	Disk drive (M1700A and M1701A)	0950-2075
15	Disk logic cable (M1700A and M1701A)	M1700-61609
16	Disk power cable (M1700A and M1701A)	M1700-61610
17	Keyboard cable	M1700-61614
19	Fuse, battery, 8 A time delay	2110-0827
20a	Line module	M1700-89504
20b	Voltage selector	9135-0248
20c	Fuse holder (2.5 A, 100/120 V)	2110-0686
	Fuse holder (1.6 A, 220/240 V)	2110-0687
	Line module fuse (2.5 A, 100/120 V)	2110-0015
	Line module fuse (1.6 A, 220/240 V)	2110-0773
21	AC switch	3101-0402
23	ROM (M1700A and M1701A) (not shown)	M1700-17950
	ROM (M1702A) (not shown)	M1702-17950
	ROM, delete analysis/preview (option D06) (not shown)	M1700-17951
	Software set, version A.01.01 (M1700A)	M1700-17700
	Software set, version A.01.01 (M1701A)	M1701-17700
	Software set, SAECG, version A.01.00 (M1754A)	M1754-17700
	Software set, version A.02.00	M1700-17710
	Software set, version A.03.00 (M1755A)	M1700-17720
	Software set, VCG, version A.01.00 (M1790A)	M1790-17700
	Software set, delete analysis/preview (option D06)	M1700-17711
	3.5in, high density replacement disks (box of 10)	M1700-89004
	Power cord (UK)	8120-1351
	Power cord (Australia)	8120-4475
	Power cord (Europe)	8120-1692
	Power cord (US)	8120-5213
	Power cord (Denmark)	8120-2956
	Power cord (Switzerland)	8120-2104
	Power cord (South Africa)	8120-4211
24	AC transformer assembly	M1700-67114
25	Chassis, lower (sheet metal only)	M1700-07323
26	Chassis, upper (sheet metal only)	M1700-07324

Table 8-2.
Main Assembly Parts List (Serial Number Prefix 3208A or Later) (continued)

Ref. No.	Description	Part No.
	Label, name set (M1700A, M1701A and M1702A)	M1700-84574
	Label set, Dutch (M1700A and M1701A)	M1700-84638
	Label set, English (M1700A and M1701A)	M1700-84608
	Label set, Finnish (M1700A and M1701A)	M1700-84688
	Label set, French (M1700A and M1701A)	M1700-84618
	Label set, German (M1700A and M1701A)	M1700-84628
	Label set, Italian (M1700A and M1701A)	M1700-84658
	Label set, Norwegian (M1700A and M1701A)	M1700-84678
	Label set, Spanish (M1700A and M1701A)	M1700-84648
	Label set, Swedish (M1700A and M1701A)	M1700-84668
	Label set, Dutch (M1702A)	M1702-84638
	Label set, English (M1702A)	M1702-84608
	Label set, Finnish (M1702A)	M1702-84688
	Label set, French (M1702A)	M1702-84618
	Label set, German (M1702A)	M1702-84628
	Label set, Italian (M1702A)	M1702-84658
	Label set, Norwegian (M1702A)	M1702-84678
	Label set, Swedish (M1702A)	M1702-84668
	Label set, Spanish (M1702A)	M1702-84648
	Keyboard label set, Dutch	M1700-84738
	Keyboard label set, English	M1700-84708
	Keyboard label set, Finnish	M1700-84788
	Keyboard label set, French	M1700-84718
	Keyboard label set, German	M1700-84728
	Keyboard label set, Italian	M1700-84758
	Keyboard label set, Norwegian	M1700-84778
	Keyboard label set, Spanish	M1700-84748
	Keyboard label set, Swedish	M1700-84768
29	Preview logic PCA (M1700A w/ preview only)	M1700-69505
30	Preview standoff	M1700-27408
31	Preview logic shield	M1700-07329
32	Terminal tab	0360-1613
33	CPU shield	M1700-07320
34	Foot	M1700-47319
35	Cup	M1700-47320
36	Retainer	M1700-47321
	Preview logic replacement cable assembly	M1700-61620
	Foot repair kit	M1700-69504

Table 8-2.
Main Assembly Parts List (Serial Number Prefix 3208A or Later) (continued)

Ref. No.	Description	Part No.
	Replacement case assembly (complete outer shell, sheet metal and plastic)	M1700-69503
	AC switch	3101-0402
	Power module	9135-0457
	Lower chassis	M1700-07323
	Top (sheet metal)	M1700-07324
	Cover	M1700-47206
	Cover-disp	M1700-47225
	Front	M1700-47207
	Front	M1702-47207
	Lower right side	M1700-47217
	Lower left side	M1700-47229
	Disk support	M1700-47303
	Battery shield	M1700-47308
	Battery guide	M1700-47309
	Foot	M1700-47319
	Cup	M1700-47320
	Retainer	M1700-47321

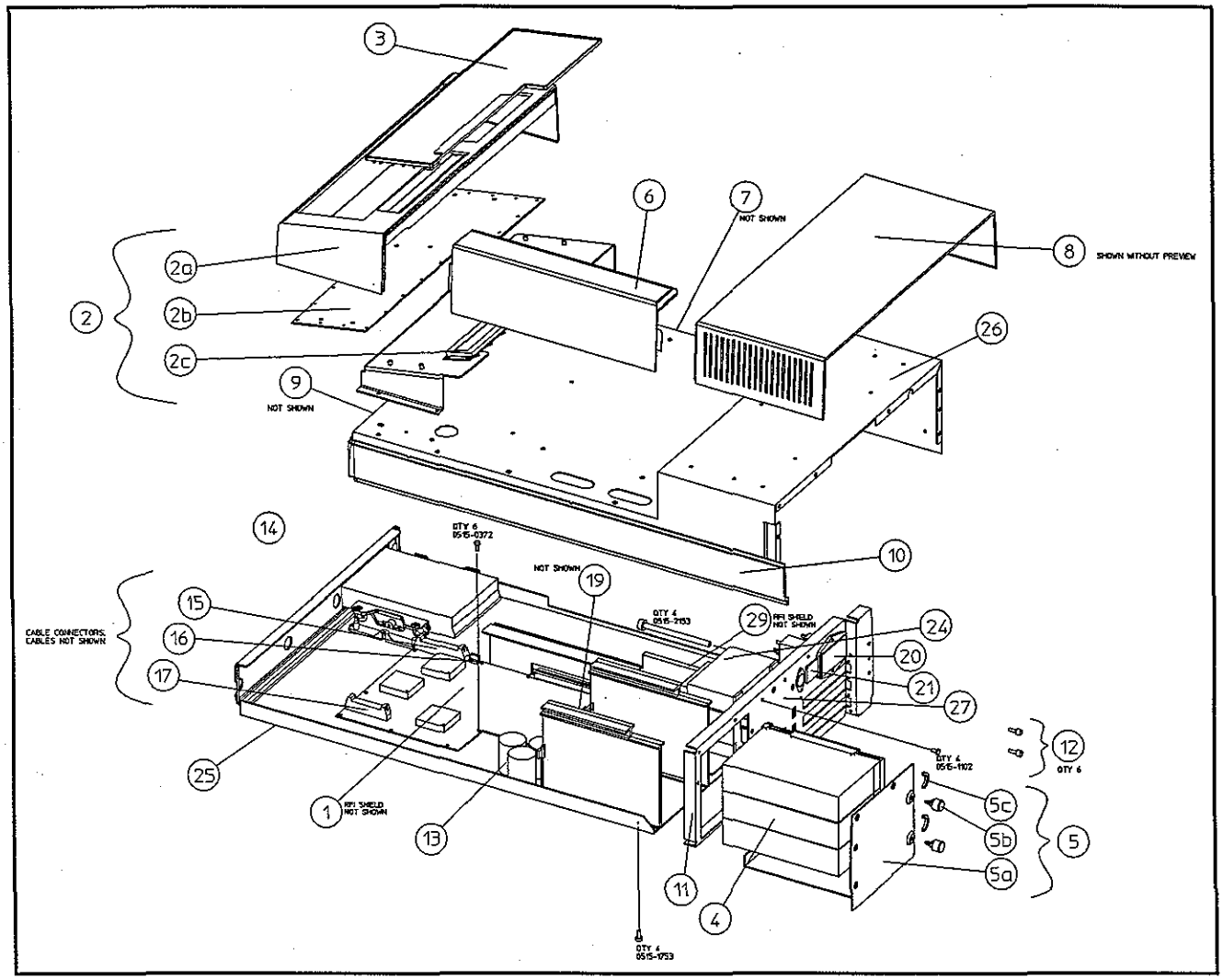

Figure 8-3. Main Assembly Exploded Diagram (Serial Number Prefix Prior to 3208A).

Note

The battery door assembly does not include the door label. To get the label, order the label set for the language needed.

Table 8-3.
Main Assembly Parts List (Serial Number Prefix Prior to 3208A)

Ref. No.	Description	Part No.
1	CPU assembly, M1700A	M1700-60100
	Refurbished CPU assembly, M1700A	M1700-68100
	CPU assembly, M1701A	M1700-60104
	Refurbished CPU assembly, M1701A	M1700-68104
	CPU assembly, M1702A	M1700-60106
	Refurbished CPU assembly, M1702A	M1700-68106
2	User interface assembly	M1700-67113
2a	Main bezel assembly	M1700-67202
2b	Key PCB assembly	M1700-47201
	Keyboard rubber gasket	M1700-47310
2c	LCD	M1700-67204
3	Key assembly, Dutch	M1700-64738
	Key assembly, English	M1700-64708
	Key assembly, French	M1700-64718
	Key assembly, German	M1700-64728
	Key assembly, Italian	M1700-64758
	Key assembly, Spanish	M1700-64748
	Key assembly, Swedish	M1700-64768
4	Battery assembly, lead-acid	M1721A
4a	Battery guide (left or right side)	M1700-47309
	Battery shield (left or right side)	M1700-47308
5	Battery door assembly	M1700-67108
6	Cover, right side (printhead)	M1700-47204
7	Left side (not shown)	M1700-47205
8	Cover, top rear (M1700A w/o preview, M1701A, M1702A)	M1700-47206
	Cover, top rear (M1700A w/ preview)	M1700-47225
9	Cover, front (M1700A and M1701A) (not shown)	M1700-47207
	Cover, front (M1702A)	M1702-47207
10	Side, right lower	M1700-47217
	Side, left lower	M1700-47229
11	(See item 27)	
12	Jack nut	M1700-27903
13	Diode array cable assembly	M1700-61608
14	Disk drive (M1700A and M1701A)	0950-2075

Table 8-3.
Main Assembly Parts List (Serial Number Prefix Prior to 3208A) (continued)

Ref. No.	Description	Part No.
15	Disk logic cable (M1700A and M1701A)	M1700-61609
16	Disk power cable (M1700A and M1701A)	M1700-61610
17	Keyboard cable	M1700-61614
19	Fuse, battery, 8 A time delay	2110-0827
20	Line module	M1700-89504
	Fuse holder (2.5 A, 100/120 V)	2110-0686
	Fuse holder (1.5 A, 220/240 V)	2110-0687
	Line module fuse (2.5 A, 100/120 V)	2110-0015
	Line module fuse (1.6 A, 220/240 V)	2110-0773
21	AC switch	3101-0402
23	ROM (M1700A and M1701A) (not shown)	M1700-17950
	ROM (M1702A) (not shown)	M1702-17950
	Software set, version A0.01.01 (M1700A)	M1700-17700
	Software set, version A0.01.01 (M1701A)	M1701-17700
	Software set, SAECG, version A.01.00 (M1754A)	M1754-17700
	Software set, version A.02.00	M1700-17710
	Software set, version A.03.00 (M1755A)	M1700-17720
	Software set, version, VCG, A.01.00 (M1790A)	M1790-17700
	3.5in, high density replacement disks (box of 10)	M1700-89004
	Power cord (UK)	8120-1351
	Power cord (Australia)	8120-4475
	Power cord (Europe)	8120-5368
	Power cord (US)	8120-5213
	Power cord (Denmark)	8120-2956
	Power cord (Switzerland)	8120-2104
	Power cord (South Africa)	8120-4211
24	AC transformer assembly	M1700-67114
25	Chassis, lower (sheet metal only)	M1700-07313
26	Chassis, upper	M1700-67112
	Label, name set (M1700A, M1701A and M1702A)	M1700-84574
	Label set, Dutch (M1700A and M1701A)	M1700-84638
	Label set, English (M1700A and M1701A)	M1700-84608
	Label set, Finnish (M1700A and M1701A)	M1700-84688
	Label set, French (M1700A and M1701A)	M1700-84618
	Label set, German (M1700A and M1701A)	M1700-84628
	Label set, Italian (M1700A and M1701A)	M1700-84658
	Label set, Norwegian (M1700A and M1701A)	M1700-84678
	Label set, Spanish (M1700A and M1701A)	M1700-84648
	Label set, Swedish (M1700A and M1701A)	M1700-84668

Table 8-3.
Main Assembly Parts List (Serial Number Prefix Prior to 3208A) (continued)

Ref. No.	Description	Part No.
	Label set, Dutch (M1702A)	M1702-84638
	Label set, English (M1702A)	M1702-84608
	Label set, Finnish (M1702A)	M1702-84688
	Label set, French (M1702A)	M1702-84618
	Label set, German (M1702A)	M1702-84628
	Label set, Italian (M1702A)	M1702-84658
	Label set, Norwegian (M1702A)	M1702-84678
	Label set, Spanish (M1702A)	M1702-84648
	Label set, Swedish (M1702A)	M1702-84668
	Keyboard label set, Dutch	M1700-84738
	Keyboard label set, English	M1700-84708
	Keyboard label set, Finnish	M1700-84788
	Keyboard label set, French	M1700-84718
	Keyboard label set, German	M1700-84728
	Keyboard label set, Italian	M1700-84758
	Keyboard label set, Norwegian	M1700-84778
	Keyboard label set, Spanish	M1700-84748
	Keyboard label set, Swedish	M1700-84768
27	Power panel assembly (includes transformer)	M1700-67115
29	Preview logic replacement assembly (M1700A w/ preview only)	M1700-69505
	Preview logic replacement cable assembly	M1700-61620
	Foot repair kit	M1700-69504

Table 8-3.
Main Assembly Parts List (Serial Number Prefix Prior to 3208A) (continued)

Ref. No.	Description	Part No.
	Replacement case assembly (complete outer shell, sheet metal and plastic)	M1700-69503
	AC switch	3101-0402
	Power module	9135-0457
	Lower chassis	M1700-07323
	Top (sheet metal)	M1700-07324
	Cover	M1700-47206
	Cover-disp	M1700-47225
	Front	M1700-47207
	Front	M1702-47207
	Lower right side	M1700-47217
	Lower left side	M1700-47229
	Disk support	M1700-47303
	Battery shield	M1700-47308
	Battery guide	M1700-47309
	Foot	M1700-47319
	Cup	M1700-47320
	Retainer	M1700-47321

Table 8-4. Fastener List

Use Location	Description	Part No.
Transformer assembly to rear panel	M3-8 flathead screw (T10)	0515-1102
CPU assembly and preview logic assembly to chassis, top case to rear panel, disk drive to chassis	M3-8 screw w/ lockwasher (T10)	0515-0372
CPU shield through CPU assembly to chassis	M3-25 (T10)	0515-0446
All plastic parts to chassis, keyboard PCB to front bezel, LCD to front bezel	4-24 × 0.250 self-tapping screw (T10)	0624-0730
Printer gear assembly to chassis, feet to chassis	M3-8 screw (T10)	0515-1753
Preview clutch mounting	M4-20 screw (T15)	0515-0686
User interface to chassis	M3-10 flathead (T10)	0515-1103
Preview logic shield to chassis (serial number prefixes prior to 3208A only)	M3-12 screw (T10)	0515-0664

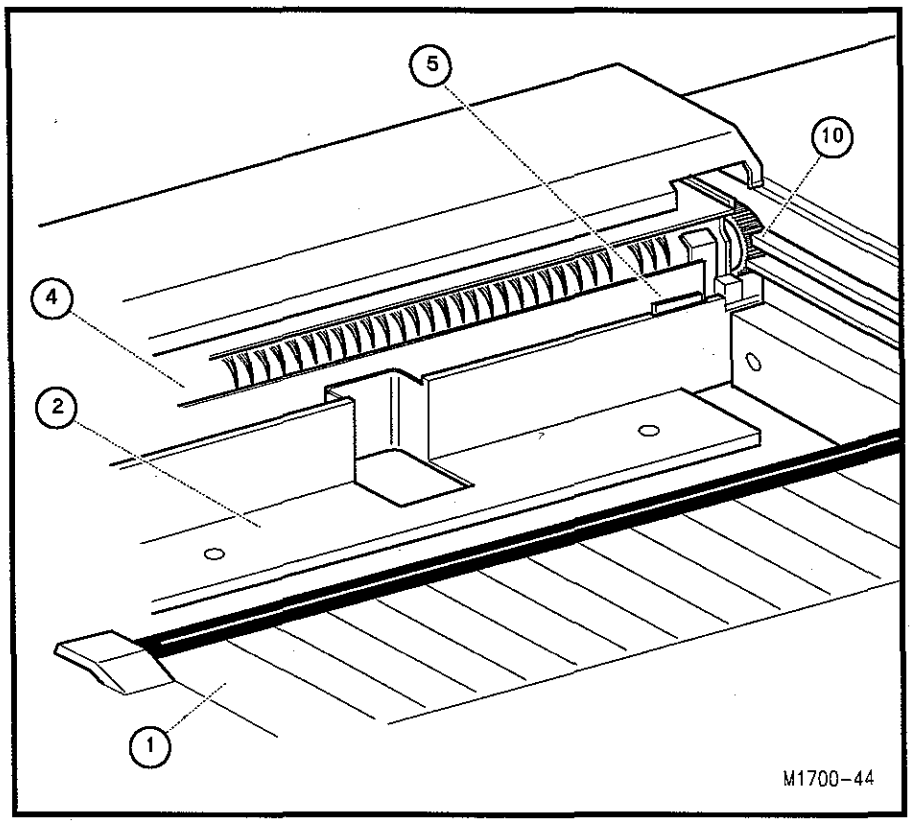

Figure 8-4. Printer Assembly Diagram.

Note

The printer door assembly does not include the door label. To get the label, order the label set for the language needed.

Table 8-5. Printer Parts List

Ref. No.	Description	Part No.
1	Printer door, English	M1700-67106
	Printer door, Metric	M1700-67107
	Printer door snap	M1700-47104
2	Printer well assembly	M1700-47220
	Paper spacer, metric	M1700-47316
	Leaf spring	M1700-27406
4	Printhead assembly	M1700-67402
	Printhead	9060-0793
	Printer logic cable	M1700-61611
	Printer power cable	M1700-61612
5	Printer sensor assembly	M1700-61628
	Printer sensor lens	M1700-43301
10	Gear/motor assembly	M1700-67400
	Printer motor cable	M1700-61613

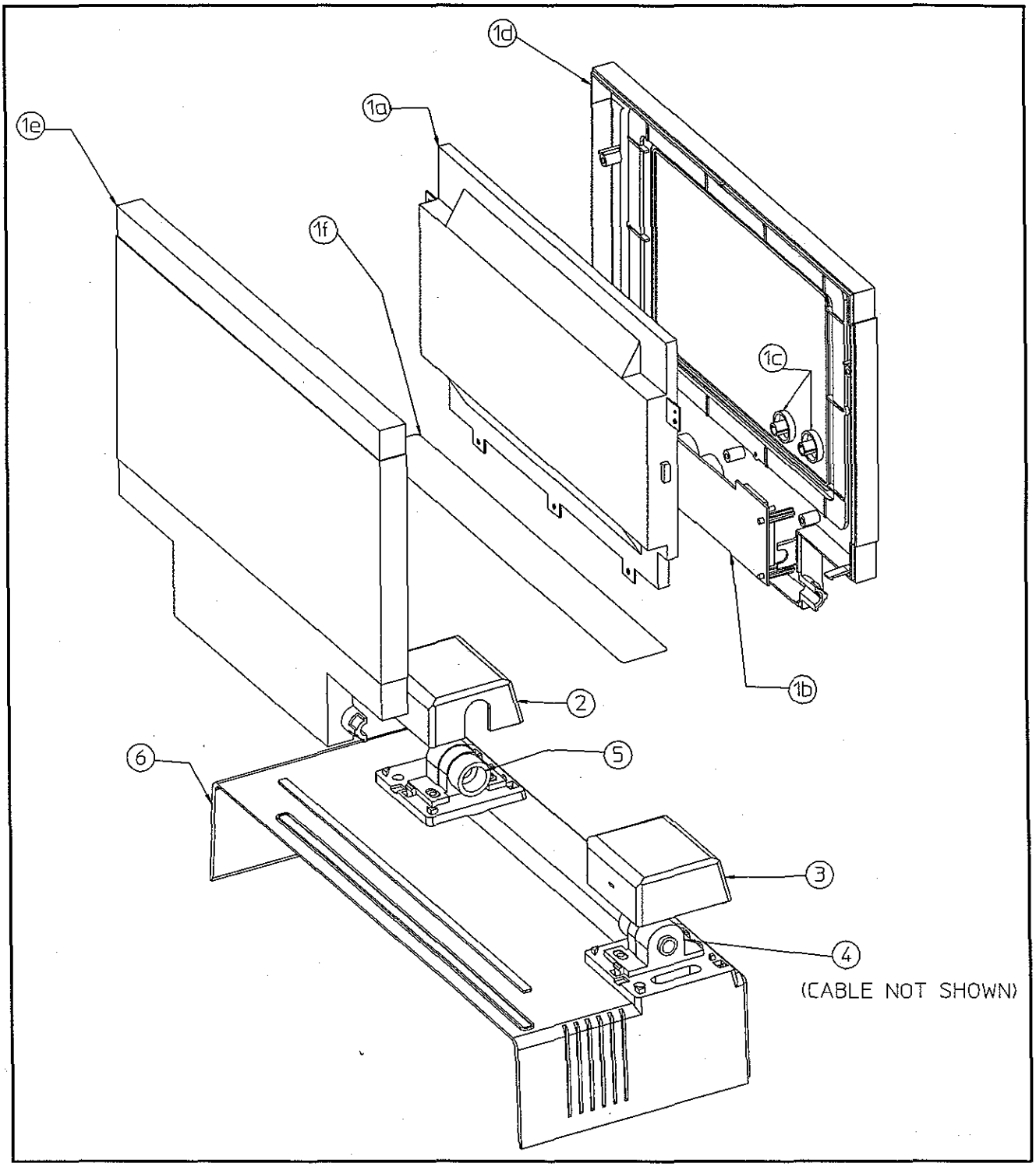

Figure 8-5. Preview Display Assembly Diagram.

Table 8-6. Preview Display Assembly Parts List

Ref. No.	Description	Part No.
1	Replacement preview assembly, complete	M1700-67104
1a	Preview LCD	M1700-27904
1b	Preview power supply	M1700-60102
1c	Knob	M1700-47501
1d	Preview bezel assembly	M1700-67203
1e	Preview back cover	M1700-47222
1f	Preview ESD shield (serial number prefixes prior to 3208A only)	M1700-84594
2	Clutch cover, right	M1700-47101
3	Clutch cover, left	M1700-47102
4	Display cable (includes left preview clutch)	M1700-67120
5	Preview clutch	M1700-67901
6	Cover, top rear	M1700-47225

Note

PageWriters having a serial number prefix of 3208A or later have a new design that allows easier component-level repair of the preview screen assembly.

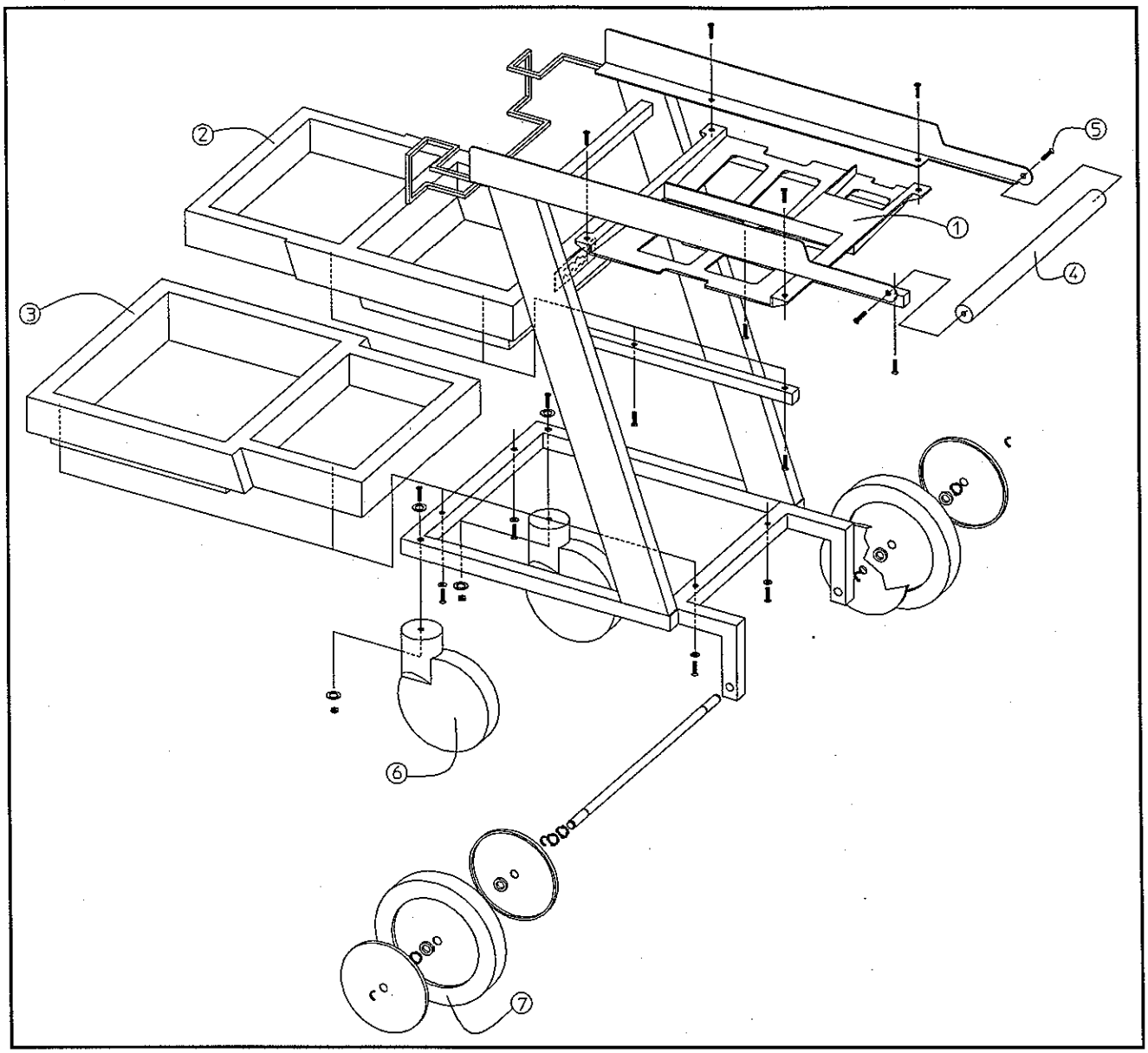

Figure 8-6. Cart Exploded Diagram.

Table 8-7. Cart Parts List

Ref. No.	Description	Part No.
	Cart assembly, M1705A	
1	Paper tray	M1705-47305
2	Upper tray	M1705-47301
3	Lower tray	M1705-47302
4	Handle	M1705-67300
5	Handle bolt	2940-0281
6	Front caster	1492-0150
7	Rear wheel (removable axle)	1492-0151
	Rear wheel (painted axle)	1492-0129
	Touch-Up Paint "French Grey"	6010-1147
	Paper management tray (not shown)	M1705-89500

Table 8-8. Cart Fastener List

Description	Part No.
Cardiograph securing screw, captive	M1700-27907
Ring, retaining; 2 per rear wheel	0510-1195
Lock nut; secures front caster	0590-1037
Screw, tpg. 6-19; secures upper and lower trays	0624-0654
Screw, tpg. 6-19; secures paper tray	0624-0400
Flat washers; 2 per front caster	2190-0457
Screw, machine 8-32; secures front of lower tray	2510-0270
Hex-head captive screw 3/8 - 16 × 2; secures front caster	2940-0201
Wave washer; 2 per rear wheel (removable axle)	3050-1296
Spacer, wheel; 2 per rear wheel (removable axle)	M1705-27405
Nylon washer for lower tray screws (removable axle)	3050-0769
Metal washer for rear, lower tray screws	2190-0758
Retainer cap (painted axle)	0590-1977
E ring (removable axle)	0510-1195
Flat washer (painted axle)	3050-1401

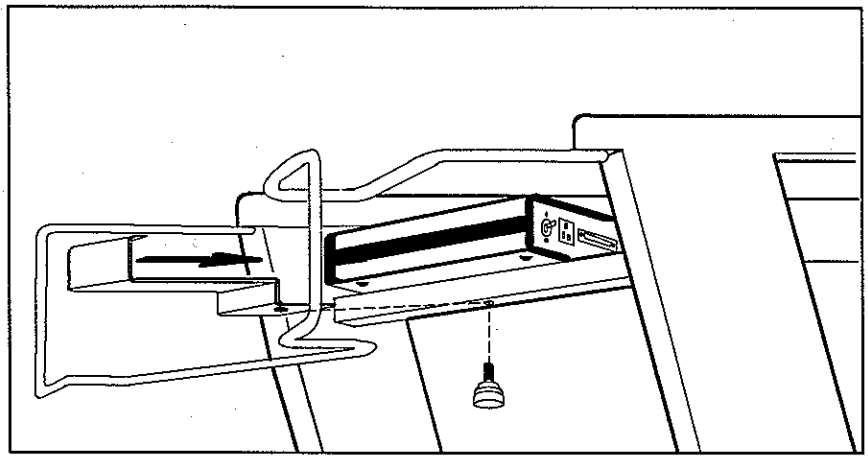

Figure 8-7. Data Communications Package Diagram.

Table 8-9. Data Communications Package Parts List

Description	Part No.
Bracket for Hayes® modem	M1706-07102
Screw, 10-32, knurled for Hayes®	0370-3219
Power cable for Hayes® modem	M1706-61619
Standard data cable for Hayes® modem	M1706-61630
Hayes® modem (Canada)	M1706-89502
Hayes® modem (France)	M1706-89503
Hayes® modem (Italy)	M1706-89506
Hayes® modem (Netherlands)	M1706-89504
Hayes® modem (United Kingdom)	M1706-89505
Hayes® modem (United States)	M1706-89501
Data cable, direct	24542M
Data cable, direct to LaserJet	24542G
Quick Connect cable, fax modem	M1756-61601
WorkStation adapter	92224F
XL Quick Connect	M1706-61636
"Quick Connect Hayes®"	M1706-61637

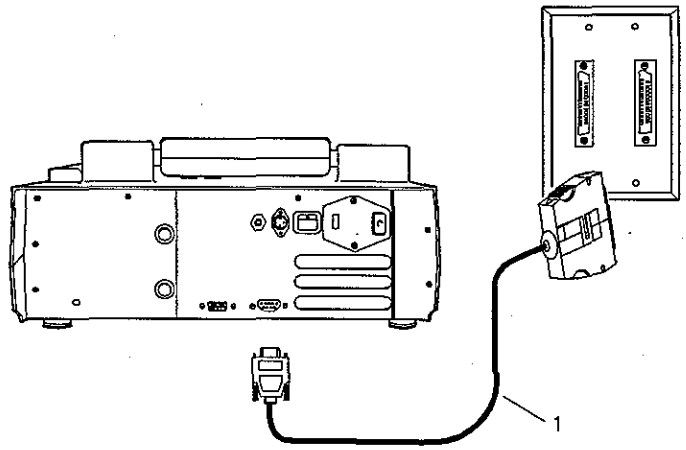

Figure 8-8. Connections for Direct-Connect Transmission

Table 8-10. Direct Connect Cable Parts List

Ref No.	Description	Part No.
1	Direct Connect Cable	24542M or M1706-61636

Note

M1706-61636 cable has locking clips to securely connect to the faceplate. The 24542M cable does not.

The M1706-61636 cable measures 5 feet (1.52 meters); the 24542M measures 9.9 feet (3 meters).

The 24542M, M1706-61630, and M1706-61636 cables are electrically equivalent and can be interchanged for troubleshooting.

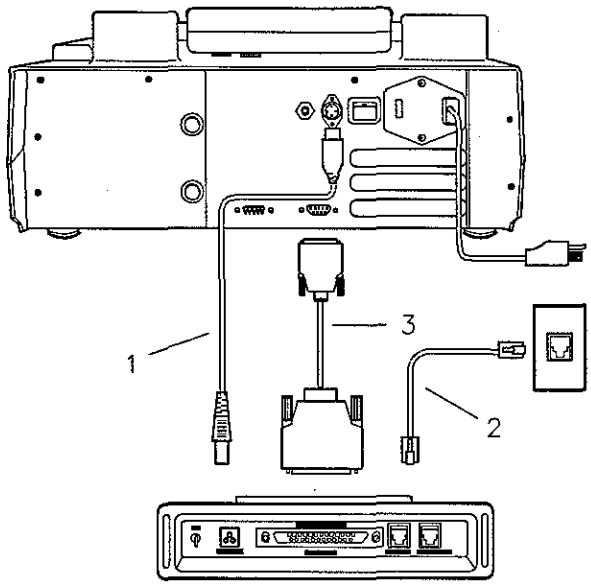

Figure 8-9. Cabling for Hayes Modem Transmission Only

Table 8-11. Hayes Modem Cable Parts List

Ref No.	Description	Part No.
1	Hayes Modem Power Cable	M1706-61619
2	Phone Line Cables	
	US	8120-3395
	French	M1706-61632
	US	M1706-61633
	US	M1706-61634
	US	M1706-61635
3	Hayes Data Cable	M1706-61630

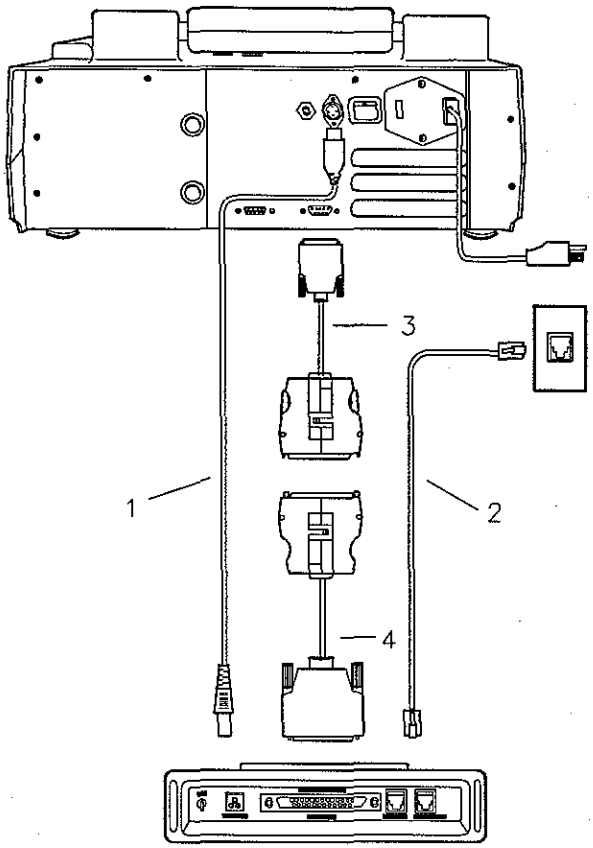

Figure 8-10.
Cabling for Hayes Modem and Direct Connect (Quick Connect) Transmission

Table 8-12.
Hayes Modem and Direct Connect Cables Parts List

Ref No.	Description	Part No.
1	Hayes Modem Power Cable	M1706-61619
2	Phone Line Cable	See Table 8-11
3	Quick Connect Cable	M1706-61636
4	Hayes Quick Connect Cable	M1706-61637

Note

The M1706-61636 cable functions as a direct connect cable when separated from the M1706-61637.

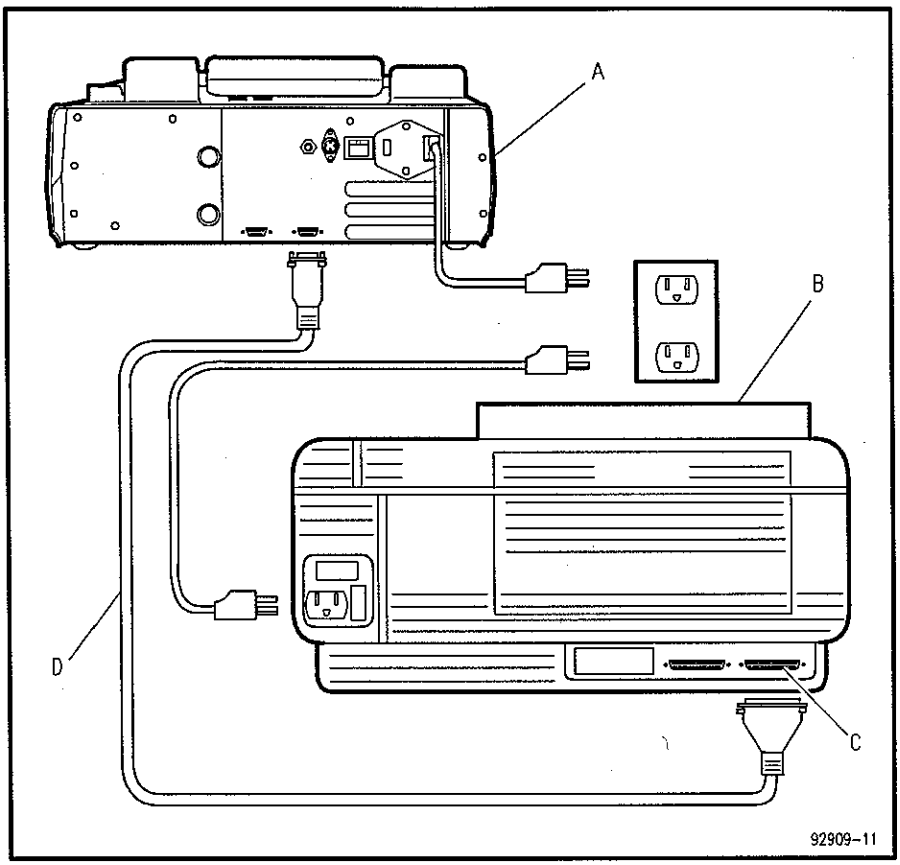

Figure 8-11. Cabling for LaserJet Printing

Table 8-13. LaserJet Cable Parts List

Ref No.	Description	Part No.
1	LaserJet Data Cable	24542G